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Extracts from the late DR. VOYSEY'S Journals, when attached to the Trigonometrical Survey in Southern and Central India.

[The Editors have given the present extract, though the last in point of date, the first place, not only from its crossing a tract of country quite unknown, but moreover from its being the volume of the Journal which closes the lamented Voysey's career; this being the journey on which he died on his route from the left bank of the Subunreeka to Calcutta, being brought dead in his palkee to the ghat of Howrah, in a state which shewed that he must have died nearly twenty-four hours previously! The date of the commencement of his fever is noted in his Journal. The specimens collected up to his death are in the Museum.—EDS.]

Mahwilgaon, 11th February.—The soil is entirely black on the surface all the way from Nagpoor. In the bed of the Nag nuddee, I found a great quantity of white felspar, quartz, calcedony and other minerals usually found in trap, the lower part of the bank consisted of a mixture of sand and clay, a very complete separation being visible between the superincumbent black soil and the red underneath. The surrounding country appears to be very rich, and is tolerably well cultivated.

Mahoda, 12th February.—Black soil until I reached Omree, when it became sandy and red, but speedily changed again to the black. Near Mahoda I was attracted by the sound of a water-fall in the Kánhan, and immediately descended its bed. It contained gneiss and granite rock in great quantity, the gneiss porphyritic, containing large crystals of white felspar. Its contractions were very much varied, as

also the inclination of the stratification; its direction was for the most part East and West as usual. It also contained the usual quartz veins parallel to the stratifications. Nearer the town, and lower down the river, I observed singular masses of hornblende slate, succeeding to, and sometimes mixed with the gneiss. I saw also several veins on the left bank of the Kánhan of a decomposing chlorite schist, the contractions of the gneiss were there also very extraordinary and irregular. The most singular rock is the iron clay, which lies on the gneiss on the river bank; I was however unable to discover any connection between the two rocks.

Bundarra, 13th February.—The road as far as Kerbie was over black soil. It then became red, and I observed in my path frequent masses of the red ironstone, but I hesitate yet whether its proper appellation is iron clay; the usual accompaniment of the red soil; viz. numerous tanks which were tolerably full, gave indication of the former riches of the country. I shot a teal with beautiful white eyes in one of them. I was yesterday deceived in respect to the situation of the range of peaked hills near Bundarra. In the Wain Gunga, I found pieces of gneiss, and here and there masses of the main rock jutting from beneath the diluvial soil. There are numerous tanks and fine groves of tamarind trees at Bundarra.

Bundarra, 14th February.—The *sungum* being more distant than I imagined, I stopped half way at a small hill, on which is a temple dedicated to Rama. The rock was gneiss passing into mica slate and clay slate with mica.

Lacknee, 15th February.—The black soil, entirely disappeared, and in its stead is found that arising from the decomposition of gneiss. The main rock is now and then seen in the beds of rivers and nullahs, but always at considerable depth from the surface. Rice is principally cultivated, and the tanks are very numerous.

Sackolee, 16th February.—The same soil, which allows of very fine roads. For a considerable portion it was very red, and I observed at the side of the road, a great quantity of the iron conglomerate in large masses. It appeared to me closely resembling that of Midnapore. I have before observed, that there is considerable difference between the iron clay found in connexion with basalt, though I believe it to be more apparent than real.

Deoree Kessory, 18th February.—The Dullee Ghaut is composed of chlorite schist, with numerous veins of quartz. The direction of the laminæ of stratification is N. E. and S. W., and nearly vertical. Deoree Ghaut is composed of red ochraceous clay slate. About a mile from the summit of the Ghaut, sandstone and sandstone conglomerate is seen. The sandstone resembles that of Gellapoorum, as well as the conglomerate that near Anarum.

The next Ghaut called Deoree, is more steep and elevated than that of Dullee. It is about 300 feet above the plain, and in one part is very steep, the rock is red ochraceous clay slate with veins of quartz. A very small portion of the rock is bare, and speedily is lost under the immense deposits of diluvial soil. The change from gneiss to clay slate probably takes place between Lacknee and Vergoonnee.

Burra Bunjarra, 19th February.—In the bed of, and on the banks, of the Beg nuddee, I observed large masses of a bluish coloured quartz rock or flinty slate. This appeared frequently, afterwards, crossing the road, accompanied by common quartz rock which was the only rock I observed between that place and Burra Bunjarra. Close to my encampment large masses of the common-bedded granite of India and a greenstone vein, as usual, which I have been able to trace for upwards of quarter of a mile.

The granite is exactly like some Hyderabad specimens, but the green stone vein does not run E. and W. but nearly N. and S. The hill of Worarbund bears nearly due East from my encampment. The water of this place is detestable. If a well were dug it would be better. I am informed that many attempts have been made to procure water, but they have failed on account of the badness of the stone beneath.

Woorarbund, 20th February.—The road lay over granite similar to that of Burra Bunjarra, the masses appearing very rarely from beneath the alluvial soil. At Chichowlee nullah, quartz rock and a trap vein. The hills on each side of the road were of granite, and externally resembled that of Koppa, the bedded masses inclining to the form of tors and logging stones. The new road is impassable on account of the long grass which completely covers it, the old road after several circuitous windings rejoins it two or three times. For three coss after passing Chichowlee, the soil is black. In my immediate neighbourhood is a quartz hill, from it I see the hill near the Beg nuddee,

and in the evening I shall probably see that of Deoree. The quartz is intimately mixed with felspar, which is sometimes found in separate clay slate, exactly resembling in some specimens that of Kerajah last year.

Doorooog, 22d February.—Alternation of black soil and of pisiform iron ore, reminding me of that in the neighbourhood of Sheelapie-ly. The face of the country as bare and destitute of trees as in the neighbourhood of Sholapoor. In the bed of the Shiwer nuddee, a reddish clay slate, the bed was composed of siliceous sand, and the banks of brown argillo-calcareous soil. In my vicinity are numerous excavations of considerable dimensions for the purpose of making tanks, the bottom about 50 or 60 feet below the surface; in one, S. E. of the town, is a thick layer of limestone of a reddish color, which at first appears to be a kind of breccia or pudding stone, but on narrow inspection, it is evident, that the whole consists of a thick bed of oyster shells which have been in some cases completely petrified, and changed into a compact limestone; and in others on fracture, conchoidal laminæ are very distinct. Perhaps it will be difficult to convince some persons that these are really petrified oyster shells, but I have not the slightest doubt, that an experienced geologist will at once admit of the fact. It remains to be ascertained, whether the rock has a bituminous or ammoniacal smell before the blow-pipe; they appear to differ very little from the shells at Miaglah Condee, except that in this instance they are entire, whereas at the former place, they are broken; here also they appear to have been compressed. The bed extends beneath the diluvial soil as far as the bed of the river, where there are a few scattered blocks.

Ryepoor, 23d February.—In the bed of the Karoo nuddee, I observed the shells, and in one bank, in particular on the right bank of the river, they were particularly distinct, owing to the polish which the stone had received from the friction of running water. The soil alternated from the red or decomposing pisiform iron ore to that of the clay slate and sand.

Ryepoor, 28th February.—On the 24th I visited the Karoo nuddee, about 4 miles S. W. of Ryepoor. The bed of the river was principally formed of the shelly slate limestone, but the masses did not present the same distinct outline which I observed further

up the river. I occupied myself during the day examining the quantity of lime contained in sixty grains, and found it lost 15, which is equal to 25 per cent.

I observed alternations of black and brown soil, but the nullahs did not afford any indication of the substratum. Here and there, however, pieces of the shelly limestone were seen in separate blocks lying on the surface. On inspecting the wells dug by Col. Agnew and Captain Hunter, which were about 50 feet deep, the first rock was the shelly limestone and afterwards a clay slate, with a various admixture of lime decomposing on exposure to rain and sun, the split masses affected the rhomboidal form. To the N. W. of the cantonment there is a large stone quarry. The rock is sandstone passing into clay slate. The sandstone is very slaty, and breaks into rhomboidal pieces; it is easily quarried, and would I think be cheaper than bricks.

Chandcoory, 29th February.—On my road hither, I frequently saw isolated masses of the shelly stone, but in no place the main rock. The soil was alternately black, brown, and pisiform iron ore.

Bhainsa, 1st March.—My course was to-day N. E. by E. over the same kind of soil, and loose masses of the shelly limestone, which are probably transported. All the villages on my road are supplied with water from tanks.

Duttaum, 2d March.—At Sindora, a half-dug well shewed red clay slate, and this was the only spot in which I saw the main rock; nothing else being visible but the brown diluvial soil.

Lowun, 3d March.—The hill S. E. which I saw from Bhainsa is Sonakani; there was formerly a gold mine beneath it; my course is due East to-morrow; my course to-day was N. E. by E. $\frac{1}{2}$ East. This village was formerly very flourishing. It was plundered in the time of Sewajee by the ruler of Sonakani, and has since gradually sunk to ruin. The black slaty limestone, which is spread about in detached pieces in great quantity, is said to lie under the diluvial soil, and is also found on the river Mahanuddee.

Kotinghy, 4th March.—In a nullah near Lowun, black calcareous clay slate, and on the right bank and bed of the river, precisely the same rock. The bed consisted of coarse granitic sand. The course of the river is nearly due North, and is two furlongs wide.

At present the pools are all stagnant, and I did not observe any stream or motion in the water to direct one. The name of the village on the river bank is Kurwa, there is a temple, whose size shews, it was not always in its present ruined state.

Beliaurh, 5th March.—Clay slate like that of Kotinghy in the beds of nullahs, sometimes in the road, and is succeeded by a reddish sandstone. And I have little doubt that were it not for the abrupt disappearance under the brown diluvial soil, that I should be able to observe the same gradual changes I have noticed in the Dekkan. At a village called Kosoola, which stands on a hill of sandstone, the rock was in large masses, and rather slaty, like that at Raupoor; I am convinced that the rocks of this formation are contemporaneous with and prior to the granite. Nullahs have now commenced making their appearance since my approach to the hills. I shall cross the outgoing of the range to-morrow. At Poorgaon, Dalliapuhar, a remarkable peak, and Sonakani, bore, the former North and the latter South.

Tanreepar, 6th March.—I crossed the Pass of Silmar, a little beyond Jora Devi, the ascent is trifling, the road good. At Jora Devi the red granular sandstone. In the Pass, sandstone conglomerate immediately followed by the clay slate and shelly limestone. At Belaipoor the rocks had a most remarkably mottled appearance, arising from large masses of calcareous clay slate enveloped in a paste of quartz, in grains containing small pieces of the same rock; very few of the masses seem much rounded by attrition. The space occupied by the rocks was about a furlong square. At a short distance appeared the usual sandstone followed by the calcareous clay slate. The Pass which I crossed to-day is in the range of hills whence I first got sight of Bhyesah, and as I have been travelling N. E. and E. their course is nearly S. W. and N. E.; the intimate resemblance in outline and structure, with the sandstone hills of the same formation.

I observed no rocks until I reached Sarunghur, where large masses of sandstone were exposed.

Laindurrah, 8th March.—Sandstone appears to be the prevailing rock, however, at the top of the Pass the calcareous clay slate seems most to abound. In the beds of nullahs, the horizontal clay slate is almost invariably seen. It is, generally speaking, the lower-

most rock. The sandstone exactly resembles that of the Silman Pass ; in one or two places I perceived sandstone conglomerate, but in small quantity.

Cordeonah, 9th March.—About two miles South of Laindurrah commences the Cootie Calee Ghaut, which is not so extensive as that of Deosir. It is composed of sandstone, beneath which is clay slate, although it is usually exposed in the same manner as at Deosir, between Genowlah and the Pass. After passing over sandstone conglomerate, I came on large bedded masses of granite, which appeared occasionally the whole distance between its first commencement and this place. Its junction could no where be observed on account of the thickness of the diluvial soil. The granite contains a considerable portion of felspar and white mica, the quartz is least in quantity.

Kalapan, 10th March.—Between Ordunnah and Cheereegaon, granite with felspar and white mica. In one spot a trap vein of the usual kind. Near Cheereegaon I observed concentric lamellar granite, similar to that of Hyderabad. It generally appeared in large bedded masses. The bed of the nullahs and rivers were composed of granitic sand.

I observed some masses of the laterite, very similar to those of the banks of the Kanhan at Mahoda. The range of hills, which appear to the Northward, are called the Baruh-puhar ; the Maha Nuddee runs on the other.

Sumbulpoor, 11th March.—On my road hither, I frequently observed the granite and the usual trap veins. Shortly after approaching the termination of the Baruh-puhar range of hills, I observed gneiss, which appeared to lie in planes of stratification parallel to the range. These appearances continued as far as the bed of the river, which is covered with masses of gneiss. The bed of the river consists of sand not much comminuted. In this bed the diamonds are sought for ; they are found in a black sand below the upper sand. It is said that no diamonds are found in the river above the confluence of the Eeb, and it is supposed that they have their origin in the rocks in that river, or on its banks. The Company have the right of search, and in their hands it is not at all productive. The Rajah of Sumbulpoor offered a rent to the Company for right of search.

Sumbulpoor, 16th March.—I went this day to visit the diamond

mines; the Rajah's Dewan had told us, that the principal place of search was at the junction of the Eeb river and the Maha Nuddee; nevertheless we were taken to a place in the bed of the Maha Nuddee considerably below it, and where it runs between a large island, called the Hira Coond, and the prolongation of the Baruh-puhar hills. We passed through a continued extent of forest land, in which I observed the ebony tree, the saul, some small teak trees, the Pavetta Indica, the Pulas in full bloom, &c. &c. We crossed the Maha Nuddee to a large island, and after going two miles in a N. W. direction, came to another island, which we soon crossed, and arrived at the huts of the guard and workers of the mines. The miners were at work in the bed of the river, about one mile below this spot. I was informed that they were directed in their search by the presence of a blackish earth under the sand, in which was found rounded pebbles of all sizes, from one foot diameter to one inch. They were principally composed of clay slate, flinty slate, jasper and jaspery ironstone. A bund is formed to stop the water, and the earth which is dug out is carried to a spot where a running stream is made to pass over it. The sand brought down by this means is subjected to search in wooden shovels; no diamond had been found for a considerable time.

Kutterbugga, 20th March.—Course at N. E. between Sopun and the Gher Gattee. I passed over some argillaceous limestone, which in one place bore a slaty character; the Pass of Gher Gattee is composed of quartz rock. In several places on my road, I observed laterite, but could no where discover its connexion with the rock beneath. My course was N. E.

Somasinghur, 21st March.—In the beds of all the nullahs I observed gneiss, also I frequently came on lumps of the laterite, but never observed its connexion with the gneiss. The soil is for the most part sandy.

Chippadhee, 23rd March.—Considerable quantities of hornblende schist in the nullah, evidently subordinate to the gneiss.

Kotooniah, 25th March.—The gneiss in some places passes into a mica schist, and contains moreover numerous beds of hornblende schist, and a few of quartz rock. This and clay was not so frequent, as I have before observed it.

Raootpalee or Hatteebur, 28th March.—The road was very uneven,

and stony, and the turns very numerous to ascend the ravines ; the rock gneiss passing into mica schist with numerous veins and beds of quartz rock. The latter part of the Jam Ghattee Pass is of hornblende schist, without any admixture of either felspar or quartz. Nothing can be more erroneous than Arrowsmith's map, as it stands at present. The dip of the gneiss is Southward, and the plane of stratification E. and W.

Chunoah, 2d April.—At Oargah, the gneiss is laid bare to a considerable extent. In the bed of a nullah, I observed several quartz veins.—To Direcola is through a very deep forest without any cultivation, except in a small spot near Direcola. The rock is gneiss hornblende schist, and quartz rock repeatedly alternating.

Cheekurdurpoor, 3d April.—The rock around this place is gneiss, with a considerable quantity of quartz intermixed.

Sureekela, 6th April.—On the road from Kishenpoor I saw gneiss in the beds of all the nullahs, and a kind of clay stone lying in a bed in the gneiss near the Soonjee ; this change is analogous to that which takes place in the granite at Hyderabad, from greenstone into the potstone. Numerous large beds and elongated veins of white quartz ; it is not improbable that metalliferous ores exist in this rock. It has been found the richest in metals of all the Indian rocks. At Callastry it contains lead ore mixed with silver ; at Nellore, copper ; at Nagpoor, manganese and lead ore and copper ; micaceous iron ore is a very common product of this rock. The iron clay which I observed at Mahoda, and in many places along the great road, has not been seen since I left Sumbulpoor. I did not stay long at that place to ascertain its habitat ; but I was informed that it was found on the summits of some of the hills in the vicinage. From the facility with which it is wrought and its durability, it is always preferred to other materials ; great part of the building in forts at Sumbulpoor is of this stone.—At Suraukbela, granite exactly resembling that found in some parts of the province of Hyderabad.

Idhull, 7th April.—Granite, of the lamellar kind sometimes passing into gneiss is the universal rock intermixed with beds of quartz rock, and the greenstone veins and beds. In one part I observed a large grained decomposing granite, composed of large amorphous crystallizations of white mica, felspar and quartz.

Bapmara or Bagmara, 8th April.—I came over the concentric granite passing into gneiss, and numerous trap veins. The tank water here was remarkably bad.

9th April.—Cooliana, left bank of the Soobunreeka, I passed a large nullah. In this short march of only nine miles, I passed large masses of quartz rock lying in gneiss and mica schist, and found in the bed of the river Soobunreeka, mica schist, with large veins of hornblende rock and greenstone.

Cooliana, 10th April.—I found the rocks of the Ghaut were mica schist, with veins and beds of quartz rock.

Dhadka, 11th April.—I passed through the village of Narsingpoor, where the manufactory of the chlorite schist into cups and plates is established; the stone is found in the neighbouring Pass of Narsingpoor. I purchased one small cup for 5 pice; they are first of all cut into their proper shape with a chisel and knife, and subsequently turned; many are spoiled in the first part of the process. The Pass of Narsingpoor, already about 300 feet above the village, is composed of mica schist passing into clay slate. I observed this rock the whole distance to Dhadka, containing veins and beds of white quartz.

12th April.—Rocks of Coliapal. The same mica schist with quartz veins. One specimen of quartz reminded me of axinite.

Geological Remarks during the March from Benares (Old Road,) via Hazareebaugh, Bankoora and Burdwan to Barrackpoor. By Dr. J. Row, B. M. S.

After crossing the Soane river at the village of Baroon, situated on its right bank, marched through Nourungabad to the village of Munurpoor, close under a range of low hills, composed of grey granite; passed next through Sherghatty and Ghurwya, during which stage passed over an undulating country, with here and there masses of granite peeping above the surface. Range of hills running East and West, about a mile distant from the village. We next proceeded to Kanachuttee fourteen miles, during which march we ascended the Dunghye Pass, ascent about five miles, composed entirely of gneiss from bottom to top.

From Kanachuttee to Penarkoon, near the encamping ground, found micaceous sandstone, very friable and slaty, also the same rock in a little declivity towards a nullah S. E. as well as in the nullah, and hornblende rock. Thence to Kutkumsandy at the 251st mile stone, during this stage, at about five miles from camp, reached the village on the right called Dewuree, near to which had to cross the Bulbul River, about 100 yards in breadth. On the left bank, at about 50 yards distant, is a hot spring, situated about twenty feet above the river; water bubbled up when a stick was inserted, and appeared to be about the temperature of 115° or 120° ; but I had not a thermometer at hand to prove it. Taste sulphureous and slightly salt, and emitting a sulphureous vapour. Bed of the river ankle deep, and a small stream at this season (February) with rather precipitous banks. Ascent nearly the whole way. About half way, met with greenstone and hornblende slate, quartz rock was greenish grey and compact and porphyritic in the bed of the Bulbul, with patches of red, light and dark, resembling jasper. The rock behind the village of Kutkumsandy and bed of the nullah composed entirely of gneiss.

Our next stage was to Hazareebaugh. At three miles from encamping ground commenced the ascent of the Kutkumsandy Ghaut, distance about three miles from bottom to top. Rock composing the Pass consisted of gneiss at the top, quartz rock abounded, coarse and fine grained, advancing into the table land, quartz rock seen in every direction from Hazareebaugh to Deigwa, ten and three-quarter miles. At about three miles from Hazaree began to descend gradually. Passed some detached hills half-way, of gneiss, also in the beds of the nullah; but further on, on the higher parts, white quartz rock appeared. About half a mile from Deigwa found a steep hill consisting entirely of crystallised quartz rock, of white and rose color, separate and mixed in layers, which was very beautiful. The bed of the nullah at Deigwa was composed of gneiss.

We next proceeded to Chuttroo Chuttee, thirteen and a half miles. Road very undulating all the way, some of the ascents very steep; crossed a Pass called the Tootkee Ghaut, up to a telegraph close to the road, about a mile and a half in length. In the Pass found gneiss fine grained and light coloured. The surface of the country covered with quartz rock and gneiss. The beds of the nullahs also consisting

of gneiss and hornblende, and the substance No. 2, which Mr. Piddington has found to be corundum, and on some heights on the left, about half way to Chuttrou, I found in large quantities quartz rock with corundum (No. 4,) of pure white and greenish grey color imbedded.

In a nullah at Chuttrou running S. to N., the bed formed of contorted gneiss, and containing large plates of mica, and here and there hornblende. Inclination East to West. It is as well to mark, that there was a short avenue of trees at the entrance to Chuttrou from the Deigwa side.

From Chuttrou to Goomea thirteen and a half miles ; encamped here ; the dak bungalow at the two-hundredth mile stone. Crossed in this stage six wet nullahs, and came down the Tilla Pass ; gentle descent the whole way. The surface of the hills covered with quartz, bed of the nullahs and declivities shewing coarse gneiss with large proportion of mica. At the village of Goomea, the higher places covered with strata of coarse and fine grit stone, containing portions of felspar and mica ; also micaceous sandstone at the dak bungalow ; a range of hills West of camp three koss, called the Soogoo range, and one hill N. E. visible since leaving Hazareebaugh seven koss from hence, called Parisnath, at the foot of which is said to be the town of Palgunj. Went to the bed of the Borako river, one mile South, which emerges from the Soogoo range, and during its course brings down specimens of coal, as both that mineral and black micaceous sandstone and shell were found in rolled specimens in its bed. The ravines running into the river, and its bed, faced with strata of sandstone, as if done by art.

The next stage was Augbalee, thirteen miles, at the one hundred and eighty-seventh milestone.

From Goomea descended into a steep nullah with little water, and about one and a half mile crossed the Borako river ; five miles further over rather even country, but descending gradually, crossed the sandy bed of the Damooda river, thence to Augbalee six and a half.

The surface of the country covered with quartz rock ; one of the nullahs half way between the Damooda and Augbalee, contained hornblende rock and greenstone, with veins of quartz and some mica. The rest consisted of gneiss.

A hill immediately S. of the bungalow consisted of gneiss, the ingredients of which are all white. Mica, quartz and felspar, also at the base, some blocks of foliated quartz.

The bed of the nullah below had beautiful vertical and horizontal strata of gneiss, with veins of greenstone and white and red quartz and felspar. Inclination of strata E. and W. across the nullah. In this nullah were found specimens of No. 2, which Mr. Piddington has named a variety of corundum.

We next proceeded to Chass, fifteen miles, encamped West of the bungalow, between that and the nuddee. In the ravines S. of camp and opposite side of the road, the ground strewn with beautiful masses of quartz crystals and foliated quartz combined. Some very large masses. In the nullah West of camp 200 yards, found the same beautiful varieties of gneiss, and containing large blocks of foliated quartz. In the bed of the nullah, the strata were as it were uplifted, turned vertically, while those on the banks were horizontally placed. Between camp and the nullah off the road on the right came upon the commencement of a tank, and found large quantities of large and small masses of globular greenstone.

From Chass passed through Chundunkeearie fourteen miles, to Dobra twelve miles; the country became generally flat and level, with here and there granite rock above the surface. The beds of the nullahs containing gneiss, about four miles before reaching Dobra, but with a rock of greenstone at the foot of which was a telegraph tower. The encamping ground at Dobra covered with quartz and mica, and here and there patches of gneiss, and in the bed of a tank which was digging near the village, the red clay contained enormous quantities of mica schist, containing crystals of schorl in large proportions, this schist was quite soft when removed from the soil, and became speedily hard on exposure to the air.

At Rugonathpoor, ten and three-quarter miles further over a flat country, with here and there rocks of gneiss, encamped under the Rugonathpoor hills, three or four conical-shaped masses of bare rock, consisting of gneiss, at the foot of which is the town, large and populous.

Some rocks between Rugonathpoor and Siljam, twelve and three-quarter miles, here gneiss with veins of hornblende.

We next proceeded to Chatna thirteen and a half miles, on the road, the beds of the nullahs contained some dark coloured gneiss, with greenstone here and there, and the surface of the country quartz rock.

At Bankoora found gneiss in patches above the surface, and in some ravines North of cantonments found nodules of iron clay, (laterite,) with blocks of crystallized quartz rock in an apparently vitrified state, and of a grey color.

The iron clay was also seen in the next state from Bankoora, viz. Bulleatore, and also in one or two places gneiss.

ROUTE.

Miles.

Sherghatty,..	to	
Ghurway,.. . . .	12	cross the Boorun and Fulgo rivers.
Kanachuttee,.. . .	14 $\frac{3}{4}$	ascend the Dunghye pass.
Penarkoon,.. . . .	8 $\frac{3}{4}$	
Kutkumsandy, . .	9 $\frac{1}{4}$	cross the Bulbul river.
Hazareebagh, . .	12 $\frac{3}{4}$	ascend the Kutkumsandy pass.
Deigwa,	10 $\frac{1}{4}$	
Chuttroo Chuttee,.	13 $\frac{1}{2}$	descend the Tootkee pass.
Goomea,	13 $\frac{1}{2}$	down the Tillia pass.
Augbalee,.. . . .	13 $\frac{1}{4}$	ford the Borako and Damooda rivers.
Chass,	15	
Chundunkeearee, ..	14	
Dobra,	12	
Rugonathpoor, . . .	11	
Siljam,	13	
Chatna,.. . . .	13	
Bancoora,	9	

A Geographical Notice of the Valley of Jullalabad. By Capt. G. H. MACGREGOR, C. B.

1. The country which is subject to the control of the Governor of Jullalabad is the valley of the Cabul river, but it is generally termed Ningrahar, or Nungnihar, the former being a corruption of the latter word, which signifies in the Affghan language nine rivers, or rivulets, and has reference to those by which the valley is intersected.

2. The Khybur mountains cross the valley at its eastern end; the snowy ridge of Soofaid Koh forms its Southern boundary; the hills of Kourkutchah, and Seah Koh, and the desert of Gumbeer, trace its Western limits; and on the North it is bounded by the primary and inferior ranges of the Safee and Momund hills, which are separated by the Coshkote river.

3. The Cabul river flows through the Northern part of the valley, and its direction is East by South, and West by North; on its left bank from Lalpoorah to Kama, a distance of about thirty-five miles, lie the Momund, (Be-doulut) hills; in some places they form ridges which advance and overhang its banks, and then bend back and form the plains of Goshta and Kama: at the confluence of the Hoshkote and Cabul rivers, the valley opens out to the North, and forms the fertile districts of Shiwah Shegee and Beysoot; the two latter are divided by a low ridge of barren hills, called Tungee Phagoo. The Northern boundary of Shiwa, which skirts the Safee hills, may be estimated at fifteen miles from the left bank of the Cabul river, and the mean width of these districts, limited on the East by the Koshkote river, and on the West by the Gumbeer desert at six miles. This part of the valley is not generally considered as belonging to Nungnihar, but as it bears on the Koshkote river, which is one of those that give origin to the term, it seems to me to be very properly included under the denomination

4. On the South side of the Cabul river are the plains of Jullalabad, Chardeh, Butteekhote, Besh Boolay and Dukka. The first mentioned are divided by the Aleeh Boghan hills, termed by the natives 'Soorkh Dewar;' these cross the valley, and form a low connecting ridge between the Momund hills and the Soofaid Koh. The plain

of Butteekote is joined on the North by that of Chardeh, and the country to the South of it, and of the plain of Jullalabad, slants up to the base of the Soofaid Koh. Besh Boolay is included in this highland, which Lieutenant Wood of the Indian Navy, describes as embracing all the rough and broken ground between the Khybur and Kurkutch ranges, and estimates its length at fifty-nine miles, and its mean width at fifteen.

5. The small plain of Dukka lies on the Western entrance of the Khybur pass; the Cabul river marks its Northern boundary; Dukka. it is enclosed on all other sides by the inferior ranges of the Khybur hills (Khoord Khybur); the high road from Dukka to Jullalabad defiles Westerly through the hills, and at the narrow part of the pass, a Thanah of Momunds is stationed for the protection of travellers; on debouching from the defile the road leads out on the Geerde country, passes on to Huzurnow and Bersawul, and opens out on the valleys of Butteekote and Chardeh.

6. The plain of Butteekote is little else than a stony desert; that of Butteekote. Chardeh is more fertile, on the North of which flows the Cabul river. Mar Koh, or serpent hill, limits its Eastern boundary; on its West are the Alee Boghan hills, and South lies the Butteekote desert; its length may be estimated at nine miles, and mean width at three and a half.

7. To describe the plain of Jullalabad, I will quote from Lieutenant Wood's report on this part of the country, submitted to Government in 1833.

“ A ridge of hills called Deh Koh, or the black, rises about Jugdulluk, and running East by North till it meets the Cabul river, bounds the plain of Jullalabad on the North; to the South it has the highland of Nung Nuhan; East it has the hills of Alee Baghan and desert of Butteekote, while its Western limit is marked by ridges which here project into the valley of the Soorkh Rood.

“ The length of the Jullalabad plain is twenty-five miles, and its width does not exceed four miles. A plain situated so high up the temperate zone, with snowy mountains in sight on the North and South, producing all the vegetable productions of a more Southern clime, is one of those exceptions, resulting from local influences, that are often found to militate against received opinions regarding climate.

From Jullalabad to Gundummuk, the distance is twenty-eight miles, and the difference in the elevation of the two places is 2330 feet, the former being 2170 feet above the sea, and the latter 4150. Travelling from the plain of Jullalabad, the change from a hot to a cold climate is first perceived at Gundummuk; so sudden is the transition that natives affirm it snows on one side, while rain falls on the opposite."

8. The following rivers intersect Nung Nuhan :—

1. The Soorkh Rood, or red river.
2. The Gundummuk ditto.
3. The Kunerssoo ditto.
4. The Chipreeal ditto.
5. The Hisaruk ditto.
6. The Kote ditto.
7. The River of Momund Durrah,
8. The Kashkote, and
9. Cabul rivers.

9. The Soorkh Rood rises in Bara Koh, flows through the Hisarut district, joins the Gundummuk river at Tuttung-i-Mahomed Acbar, and falls into the Cabul river at Durrounta; it is called the red river, from the colour of its water; it is fed by tributary streams at Tootoo, Baghwanee, Tuttung and Bala Bagh. The Soorkh Rood is not navigable.

10. The Gundummuk river rises in the Soofaid Koh; it is joined by streams from Moonkhee Kheil and Koodee Kheil, it flows by Gundummuk, and falls into the Soorkh Rood; at Killa Alladad Khan it is not navigable.

11. The Kurrusssoo river rises in the Soofaid Koh, runs through the valley of the Wuzzeeree Khoogeeancee, passes Kujja, Behoor, and Futtehabad, and flows into the Soorkh Rood close to the town of Bala Bagh.

12. The Chipreeal river rises in the Soofaid Koh, a little above Pucheea, flows by Agan, Chipreeal and Heidah, and joins the Cabul river about four miles to the Eastward of Jullalabad, at Serai-i-Khoosh Goombuz.

13. The Hisaruk like the rest rises in the Soofaid Koh, above Muzeena, runs past Hisarshae, Burroo and Bareekal, travels on to
 Hisaruk
 River. Chardeh, and sinks into the Cabul river at Lachoopoor.

14. The Kote river rises in the Soofaid Kote, its course is by Khunder Khanee, Butteekote, Chardeh, and falls into the Cabul
 Kote
 River. river at Killa-i-Khalid Khan.

15. The river of Momund Durra rises in a valley from which it takes the name, and which is situated among the inner ranges
 Mumund
 River. of Soofaid Koh. This river flows past the Nazeean valley, and the Sheinwaree forts of Besh Boolaly ; it branches into two streams near Busawul ; the larger one falls into the Cabul river at Busawul, and the smaller one flows in the direction of Huzarnow, and exhausts itself on the cultivation appertaining to that place. This river forms the limit of the Cabul valley on the south-eastern side, paying revenue to the Government.

16. The Kashkote river is said to rise near the source of the Oxus ; it flows through Kashgar, Chughurseraï, Koonur and
 Kashkote
 River. Kashkote, and joins the Cabul river near the village of Kama. During the summer on the melting of the snow of the Safee mountains, this river is not fordable ; timbers are floated down from Chughurseraï, Koonur and the Safee valleys to Jullalabad. Rafts of inflated cow hides also float down the river, bringing grain, iron and other articles, supplied from the Bajore and Koonur countries.

17. The Cabul river in its course receives several considerable rivers, the Punjsheer, Ghorebund and Loghur streams ;
 Cabul
 River. besides those intersecting this valley are its tributaries ; in summer it flows with great violence ; it is fordable only from November to April. Rafts of inflated hides float with the current, and convey people and goods from Jullalabad to Peshawur. Rafts cannot stem the current. On the journey down the river being accomplished, the raftsmen take the hides out of the water, allow the inflated air to escape, pack up the hides, and return with them by land, either laden on jackasses, or upon their own shoulders.

18. These streams, with the exception of the Soorkh Rood, Kaskote and Cabul rivers, are more properly termed rivulets ; they are chiefly fed by the melting snows of the Soofaid Koh. Canals conduct their waters over the country through which they flow, and spread fertility

wherever their influence extends. Several of these streams during the summer at the period of the rice cultivation, are exhausted before they reach the Soorkh Rood, or Cabul river, to either of which at other seasons they form tributaries.

19. The distance of Dukka to Soorkhal, by the high road, is $77\frac{1}{2}$ miles, *vide* subjoined table of routes furnished me by Captain Paton.

20. The low hills of Jullalabad are extremely barren, but the lofty ranges of Koond, Kurkutchah, and Soofaid Koh, are richly clad with pine, almond and other trees, which supply the market with excellent timber.

21. The highest peak of Speenghir, or Soofaid Koh, is stated by Lieut Wood at 14,100 feet above the level of the sea. The same officer talking of the people who inhabit the hilly country, says,

“To see a stream well conducted along the face of a hill, 25 feet above the mean level of the valley below is not uncommon, and where no rivulets intersect the valleys, a running stream is procured from *karezes* or wells. The appearance of these sequestered valleys is a mixture of orchard, field, and garden. They abound in mulberry, pomegranate and other fruit trees, while the banks of their streams are edged with a fine healthy sward, enamelled with a profusion of wild flowers and fragrant from aromatic herbs; near the forts they are often fringed by rows of weeping willows.”

22. The plains of Butteekote, Geedee, Goshta, Chardeh, Lookhee and the country skirting the hills, afford good pasturage. The pastoral Ghilzies bring a great number of camels and sheep to these districts in autumn, and return to Cabul in the spring.

23. The principal towns and villages in the valley are,

Jullalabad,	Huzanow,
Sooltanpoor,	Busowul,
Bala Bagh,	Lalpoora,
Char Bagh,	Gurdee,
Futtehabad,	Goshta,
Neemla,	Sun-i-Serai,
Gundummuk,	Kameh,
Kujja,	Shewah,
Heidah,	Killatuk,
Besh Boolay,	Shegee.
Butteekote,	

On the North of Nungnihar lie the countries of Noorgul, Kooner, Chughurserai, Bajore, Kashgar, &c. ; on the West, Lughman and the Ghilzie country ; on the South, Bungish and Koorum ; and East lie the Khyber and Upper Momund country.

History.

1. As far back as A. D. 977, we find that Mingnihar was the scene of contention between Sabuctagi the Tartar, who assumed the title of Nasir-ood-deen, and Jaipal the Brahmin Prince. History mentions that their armies came in sight of each other on the confines of Lungán now called Lughman ; and the present village of Futtch-i-abad is said to mark the spot where a victory was gained by Subuctagi over the Hindoo Prince ; his subsequent defeat and imprisonment took place at Peshawur.

2. Sooltan Babur in his memoirs, thus mentions Nungnihar, in the year A. D. 1504 :—

“Nungnihar,” he says, “in many histories is written Nekerhar. The residence of the Darogha or Commandant of this district is Adinapur. Nungnihar lies on the East of Cabul, thirteen farsangs of very difficult road. In three or four places there are some very short *kotuls*, or steep hill Passes, and in two or three places there are narrows or straits. The Khiralchi and other robber Afghan tribes infest this road with their depredations ; there was no population along this road until I settled Kuratur below the Kurruksai, which rendered the road safe. The *gurmsil* (or region of warm temperature,) is divided from the *sergil* (or region of cold temperature,) only by the steep Pass of Badam Ches-meh. Snow falls on the Cabul side of this Pass, but not on the Kurruksai and Lamghanat side ; the moment you descend this hill Pass you see quite another world. Its timber is different ; its grains are of another sort ; its animals of a different species, and the manners and customs of the inhabitants are of a different kind. Nungnihar has nine streams. Its rice and wheat are excellent ; oranges, citron, and pomegranates are very abundant, and of good quality. Opposite to the fort of Adinapoor to the south on a rising ground, I formed a Char Bagh (a great garden,) in the year 914, A. D. 1508. It is called Bagh Vafa (the garden of fidelity,) It overlooks the river which flows between the fort and the palace. In the year in which I defeated

Behar Khan, and conquered Lahore and Dibulpoor, I brought plain-tains and planted them there ; they grew and thrived. The year before I had also planted the sugar-cane in it, which throve remarkably well. It is on an elevated site, enjoys running water, and the climate in the winter season is temperate ; the garden is charmingly laid out. To the South lies Soofaid Koh, which separates Bungush from Nungnihar ; nine streams descend from the mountain, the snow on its summit never diminishes. On the skirts of the hill there are many airy and beautiful situations. On the south of the fort is Adinapoor. The tomb of the holy Lau, the father of Nuh, is in the Toomán of Alishung. In some histories, the holy Lau is denominated Lamek and Lamekan. The people of the country have a general practice of changing the letter of Kaf into Ghain, and it seems very probable that the name Lamghan originated in that circumstance.

“ The Toomán of Nugnihar, Manderam Dereh Noor, Dereh Kooner, Noorgie and Cheghurserai I gave to Nasir Mirza.

“ I marched from Jumdool for the purpose of attacking Bajore. Having encamped near it, I sent a trusty man to
 A. D. 1519. Jan. 3d. require the Sooltan of Bajore and his people to submit and deliver up the fort. That stupid and ill-fated people refused to do as they were advised, and sent back an absurd answer. I therefore ordered the army to prepare their besieging implements, scaling ladders and engines for attacking fortresses. The preparations having been completed, it was luncheon time when the tower was breached, immediately on which the assailants drove the enemy before them and entered the tower. The men of the main body at the same time also mounted by their scaling ladders and entered the fort. By the favour and kindness of God, in the course of two or three hours, we took this strong castle (Naogee.) As the men of Bajore were rebels to the followers of Islam, and beside their rebellion and hostility, they followed the customs and usages of the infidels, while even the name of Islam was extirpated from among them, they were all put to the sword, and their wives and families made prisoners. I bestowed the country of Bajore on Khwojeh Kilan.

“ In the hill country all the inhabitants are Kafirs. In Kafirstan grapes and fruits are extremely abundant, and it produces a great quantity of wine, but in making they boil it. In the hills of this

district, they have the pine, the jilguzeh, the oak and the mastic tree in great abundance.

"I embarked on a raft, and passing the strait of Daronta, landed higher up than Jehannumah; we went to the Bagh-i-January 7th. A. D. 1520, Vafâ, which is opposite Adinapoor; Kiam Urdooshah, the Hakim of Nungnihar, met us as we landed from the raft."

In the events of the year 1525, Babur writes on the 8th of Sefer, (Nov. 24th.) "In halting at Gundummuk I had a severe defluxion,* but by the mercy of God it passed off without bad effects. On Saturday I halted at the Bagh-i-Vafâ, where I was forced to wait nine days for Hoomaiun and the army that was with him; the garden was in great glory, it is a charming place, the few days we staid there, we drank a great quantity of wine. On Sunday the 17th Hoomaiun arrived; that evening we marched and halted at a new garden, which I laid out between Sooltanpoor and Khwajeh Rustam.

"On Wednesday we marched thence, when I embarked on a raft, on which I proceeded down the river, drinking all the way till we reached Kosh Goombuz, where I landed and joined the camp." Babur proceeded to Peshawur (Begram.)"

In the year 1570, Jullaloodeen Mahomed Akbar Badshah, when proceeding from Cabul to India, desired Shumshoodeen Khafee to build the towns of Jullalabad and Attock, and which were completed in two years. His son Selim, (Jehanghir,) was for some time acting governor of Jullalabad.

The historian Abdool Kadir Budwanee, in confirmation of the above, states; "On the banks of the Nila, Akbar Badshah desired the town of Jullalabad to be built: about three coss from the town is the Bagh-i-Sufa, commonly called Char-Bagh, formerly known as the Bagh-i-Vufâ, made by Sooltan Babur, near which was Adinapoor, the place where the governor resided." The same author says, that Nungnihar in former times was known by the name of the Joo-i-Shace.

During Shah Jehan's reign, that monarch made some additions to the town. The following is an inscription on a marble slab taken from an old fort, and placed in the principal Musjid of the town,

* A complaint very prevalent in the summer of 1840, among the British troops at Kujja and Gundummuk.

shewing that the fort was built by Itimam Khan, in Shah Jehan's reign, A. D. 1638.

بمکمل شاه جهان اهتمام خان چونهاد
 بروی ساحت دیرین بنای خیر مال
 ز آسمان زمان تا اثر بود پیدا
 مباد خوبی این قلعه در شکنج زوال
 حساب سال بنایش ز عقل می چستم
 ندا رسید بگوشم بنای فرخ فال
 سنه ۱۰۵۴ *

In the year A. D. 1735, Nadir Shah sent Sooleeman Yeesawul, (stick-bearer,) from Cabul, at the head of a mission to Mahomed Shah of Delhi. On the fifth day Sooleeman and his party reached Jullalabad. Abaidoolah, the son of Meer Abas of Kooner, whose power extended over the whole of Nungnihar, desired Sooleeman to be slain, and he was killed with much cruelty. Nadir Shah on hearing of the treatment that Sooleeman had met with, immediately left Cabul with his army and marched to Gundummuk, via Chareekur, Nepal and Tugon, thence he sent on to Jullalabad, sirdars Jillayer and Vyaz with the vanguard. Abaidoolah evacuated Jullalabad and fled to Kooner; he was pursued by the sirdars, he fled to Swat, many of his followers were slain, and his sister and women made prisoners and brought to Nadir Shah.

The monarch with his main army went from Gundummuk (where

* The translation of the inscription is as follows :—

Under the orders of Shah Jahán, Ihtamam Khan laid, this (stone)
 On the face of the field of antiquity as the foundation of prosperity and wealth.
 As long as the signs of the Firmament shall remain extant
 Let not the fairness of this Fort be doomed to suffer from the pressure of destruction.
 I was searching within my mind the Era of this foundation.
 A divine voice struck my ear, saying, *the foundation of good Omen.*

The numerical value of the letters composing the words, (*the foundation of good omen*,) بنای فرخ فال added up make the date of the building A. H. 1054, corresponding with A. D. 1638.—Eds.

he describes the water to be good, and the air delightful,) to Behar; thence to Jullalabad, where he remained only 31 days; his sirdars meanwhile having captured Kooner and Bajore, he proceeded via Chara to Peshawur, where Nasir Khan, the governor, submitted without making any defence.

To enumerate all the important events which have taken place in this district since that period would take up too much space. I will only briefly allude to a few of them.

On the 10th of Sept. 1801, Shooja-ool-Moolk marched from Peshawur to attack Cabul. At Heshkan he found Mahmood's force, consisting of three thousand men, drawn up, the Soorkhrood being in their front. Elphinstone thus describes the battle. "Shooja had at this time at least 10,000 men, but they were Burdooranees, and though accustomed to the battles of their clans, they were strangers to discipline and to regular warfare. Shooja's armies were at first victorious, but his Burdooranee troops eager to profit by the confusion, quitted their lines as soon as they thought the victory decided and began to plunder the royal treasures, which Shooja had imprudently brought into the field. Futteh Khan seized this opportunity and charging at the head of his Baurikzyes completed the confusion in Shooja's army. The battle was now decided, and Shooja escaped with some difficulty to the Khyber."

In the year A. D. 1809, June 29th, Shah Shooja sustained another defeat at Neemla when opposed to Mahmood Shah and his Minister Futteh Khan. Akram Khan, Shah Shooja's Prime Minister, was slain in this battle. Shah Shooja fled over the mountains South of the Khybur Pass to Hisaruk.

On Zuman Shah's defeat near Sireesp, he fled to the Jullalabad valley, and stopped at Mollah Ashik's fort, which is on the Chipreel rivulet, about 14 miles from the town of Jullalabad, near the Soofaid Koh; "the Moollah received them hospitably, but took means to prevent their escape, and sent off a messenger to Mahmood Shah. Shah Zuman during his confinement, secured the Koh-i-Noor with some other jewels in the wall of his apartment, which were afterwards found on Shooja's accession." (Elphinstone) The poor monarch was blinded on his road to Cabul, by piercing his eyes with a lancet.

On Shah Shooja being restored to his throne, the first step he took

was to release his brother Shah Zuman, and soon after Moollah Ashik who had betrayed him, was apprehended and suffered the punishment of his perfidy and ingratitude.

When the Baurikzye Khans gained the ascendancy over the Doo-ranee monarchs, Azeem Khan placed his nephew Nuwab Zuman Khan in the government of Nungnihar, and from the time of Azeem Khan's death 1823, until the year 1824, the Nuwab enjoyed the entire government collections of the province. Dost Mahomed insisted upon a portion of them being made over to him; this the Nuwab refused. The Ameer collected a force and marched against him, and on his approach the Nuwab withdrew his guns to Kameh, and there took up a position near Abdoor Ruman's Fort; negotiations took place between the contending parties, the Nuwab having made some slight sacrifice of his interests; Dost Mahomed returned to Cabool.

The Nuwab then commenced fortifying the town of Jullalabad, the old fortifications being nearly on a level with the ground; a great number of people were collected for the purpose; the work advanced rapidly, but ere a month had elapsed, the Ameer was again on his march to Jullalabad, and the fort was still incomplete; the Nuwab, however, determined to defend it. After three days resistance a mine was sprung, the town was taken by assault, and it was given up to plunder. The Nuwab was taken prisoner and displaced from power, and Sooltanpoor and the transit duties of Cabool were made over to him for his maintenance. Dost Mahomed's brother, Ameer Mahomed, remained a short time in charge of the province; he was succeeded by the Ameer's son Mahomed Afzool, who was recalled after a few months, and succeeded by his younger brother Akbar; he continued in charge until the arrival in 1839 of the British Troops. Meerza Aga Jan, a Kuzzilbash, was then on the part of the Shah appointed governor.

There are topes and extensive ruins to be found scattered over the valley, which if explored attentively by learned antiquarians would no doubt reward them for their labours.

There are now no perfect buildings of any size, beauty, or antiquity in the valley,

The royal gardens of Char Bagh, Baghwanee, Bala Bagh, Neemla, and Gundummuk, laid out by Sooltan Babur and Alee Murdan, and

renewed by Timoor Shah and Shah Zuman, during the Baurikzye rule were quite neglected.

The Gundummuk garden has been quite destroyed; the fine old plane trees were cut down by sirdar Mahomed Akbar's order, to build the fort of Futtung, at the confluence of the Soorkhrood and Gundummuk rivers. The fort would be found strong against Afghan troops without artillery.

There is a Zearut at Char Bagh, to which Moosulmans and Hindoos go to pray. The former suppose it to be the tomb of Shah Fyz-oollah-Wullee, the cup-bearer of Mahomed the prophet; the Hindoos, on the other hand, imagine it to be the resting place of Hajee Ruttun, a fuqueer of great sanctity and note. There is also a large Hindoo temple in the town of Jullalabad, inhabited by a supposed descendant of Ruttun. Hindoos in great numbers come from Peshawur and other places to make him offerings, which are said to amount to the large sum of 40,000 rupees annually.

In the neighbourhood of Jullalabad, there is also Shah Murdan's Zearut, held sacred under the supposition that Allee, the son-in-law of Mahomed, rested there, and in the temple is exhibited a large black stone, shewing an impression of the hand of Allee. A garden is attached to the Zearut, where a fair is held every Thursday, to which crowds from the town and camp resort. Nazir Hussan, formerly in the service of Nuwab Zuman Khan, is now expending his money on the Zearut and garden. The Zearut was originally raised by Abdoola Khan Khafir, in the reign of Timoor Shah.

Of late years the following persons filled the office of governor of Jullalabad.

<i>Governors.</i>	<i>In whose reign.</i>
Abdool Khan Khafir,	Timoor Shah.
Meer Dad Khan, (Isaukzye.) ..	Ditto.
Ghunnee Khan,	Ditto,
Gool Mahomed Khan, (Gurdeezye.)	Zuman Shah.
Causim Khan, (Moghul,) ..	Ditto.
Baba Khan, (Afshar,)	Ditto.
Meer Alee Khan,	Ditto,
Gholam Alee,	Ditto.
Shurreef Khan, .. ..	... Shah Shooja.

Ibrahim Khan, (Jumsheeree,) ..	Mahmood Shah.
Shehur Dil Khan, (Baurikzye,) ..	Mahomed Azeem Khan.
Shukoor Khan, (ditto,)	Ditto.
Moghul Khan,	Ditto.
Nuwab Zuman Khan,	Ditto.
Ameer Mahomed Khan,	Dost Mahomed.
Mahomed Afzool,	Ditto.
Mahomed Akbar,	Ditto.
Meer Aga Jan,	Shah Shooja.

Routes from Jullalabad to Dukka.

No.	Names of stages.					Miles.
1.	Summer Kheil,	..	..	..	..	7
2.	Buttee Kote,	..	..	..	..	13½
3.	Huzarnow,	..	..	..	..	10
4.	Dukka,	..	..	..	..	9
						<hr/> 39½
2						
1.	Summer Kheil,	..	..	..	..	7
2.	Char Deh,	..	..	..	..	14
3.	Busawul,	..	..	..	..	8
4.	Dukka,	..	..	..	..	13
						<hr/> 42

From Jullalabad to Soorkhab.

1.	Futtihabad,	..	..	..	..	15
2.	Sufaidsung,	..	..	..	..	13
3.	Soorkhab,	..	..	..	..	10
						<hr/> 38
2						
1.	Sooltanpoor,	..	..	..	..	8
2.	Futtihabad,	..	..	..	..	7
3.	Neemlah,	..	..	..	..	9
4.	Gundummuk,	..	..	..	..	6½
5.	Soorkhab,	..	..	..	..	7½
						<hr/> 38

Weights, Measures, &c.

The land revenue in kind is collected in Tabreez weight, and the money taxes in the nominal Tabreez (Khaan) rupee.

Tabreez Weight.

2½ Charuks,	1 Mun-i-Tabreez.
100 Mun-i-Tabreez, ...	1 Kharwa-i-Tabreez.
1 Kharwa-i-Tabreez, ..	10 Maunds Hindoostanee.
100 Kharwa-i-Tabreez, ..	1000 Maunds Hindoostanee.

Coin Table.

10 Shahees,	1 rupee Khawa.
20 Rupee Khawa,	1 Tooman Tabreez.
1 Tooman Tabreez, ..	Cos. Rs. 14-9-4.
100 Toomans-i-Tabreez, ..	Ditto, 1,458-5-4.
1000 Toomans-i-Tabreez, ..	Ditto, 14,583-5-4.

An account of a remarkable Aerolite, which fell at the village of Manicgaon, near Eidulabad in Khandeesh. Communicated, with a specimen, to the Asiatic Society, by CAPTAIN JAMES ABBOTT, B.A. late Resident Nimaur.

A Chemical Examination of the above Aerolite, and Remarks, by HENRY PIDDINGTON, Curator Geological and Mineralogical Department of the Museum of Economic Geology.

At the Meeting of October, 1844, Captain Abbott communicated to the Society the following documents, with two small specimens of the Aerolite.

CAPTAIN J. ABBOTT, *Artillery Dum Dum, to the Secretary Asiatic Society, Calcutta,*

Dum Dum, Sept. 16th, 1844.

Sir,—In July 1843, I received at Mundlaisir, from the Komarder (or Native Collector) at Asseer, a report of the fall, in that part of the country, of a meteoric stone, together with a few grains, said to be particles of the same. I immediately dispatched a Karkoon to the spot, to ascertain the truth or falsity of the statement, and to collect

specimens of the supposed Aerolite. These accompany my letter. They differ so much from the structure of every reputed Aerolite I have previously met with, that I should be inclined to doubt] the veracity of the reporters, could I discover any other reason for questioning it. I have never heard any other instance of an Aerolite in that neighbourhood. The fact is implicitly credited in the neighbourhood of Eidulabad, where it is said to have occurred. These specimens appear to me to resemble masses of friable rock of the quartz family, which I have met with in Malwa. But it is evident that a mass of texture so loose could never have borne unshattered, the propelling agency of fire, nor has any volcano existed within the memory of man in Nimaaur or Mahiswah, nor I believe in Khaundes, although fable declares Oojyne to have been buried beneath a shower of mud, and Mahiswah to have been destroyed by the mischievous malice of a demon. The depositions of the observers I have translated and appended. The spot was beyond my district, or I would myself have visited it. It is probable that the collector of Khaundes may have reported it to the Bombay Society.

This report, and the note upon granite in the Nurbudda, were prepared many months ago, but restricted leisure, and many concurring events, prevented their being forwarded.

J. ABBOTT, *Capt. Arty.*

Fall of a Meteoric Stone in Khaundes.

Deposition taken by a Karkoon, despatched from Asseer by Capt. James Abbott, to collect information upon the subject.

Oonkar, Puttail, and Ghubbahjee, Chowdry, of village Maniegaon, purgunnah Eidulabad, Tuppeh Sowdah, Illaquh Dhooliah in Khaundes, depose as follows.

Taken July 26th 1844.

On Mittee Asarr, Soodie Teej, Goraaur ké dín.

We were in our house. At $3\frac{1}{2}$ o'clock P. M., whether from heaven or elsewhere, a prodigious ball (ghybee golah) fell. The noise it made was very great, it might be heard twenty miles round. We heard it with our own ears, and in fear and trembling ran outside to look, so running out, we found that it had fallen outside the village

on the Southern aspect, and that in falling it had been shattered to pieces, some of which had been scattered far. We put our hands upon that which lay together, it felt cool; shortly after it became rather warm. When first we saw it, the pieces were black; after a day's interval the color changed to blue, and now the fragments are white.

Question. When the ball fell, was any flash perceptible, or was the heaven darkened? Who saw it fall? How large was it? And who heard the noise at the distance of 20 miles?

Answer. We saw nothing. When the ball fell, we heard the noise, and ran to see what had caused it. The spot on which it fell was hollowed by the shock, a span and half in diameter and three fingers breadth in depth. The ball was about the size of a kedgeriee pot (ghurrah, i. e. about ten inches in diameter); the people of Eedulabad and of other parts heard the noise in the clouds, at least so they say. The ball being shattered, people came and carried away the pieces. The remainder was sent to the Sowdah Komardar, and by him to Dhooliah. What remains I give you.

True and literal translation.

J. ABBOTT, *Capt.*

Mundlaisir, August, 1843.

Pol. Asst. in Nimaaur.

Note.—A few grains of this Aerolite were first sent me by letter from Asseer. I despatched a Karkoon immediately to the spot to make enquiries, and collect as much of the fragments as possible, supposing that he should have cause to believe the report well founded. The greater part of what he collected accompanies this report. It agrees exactly with the grains first sent me. J. ABBOTT.

At Captain Abbott's suggestion, the Collector of Khandeish, J. Bell, Esq. Bomb. C. S. was written to, and he has kindly forwarded us a few small fragments more, with the following letter and deposition.

To W. W. BELL, Esq. Collector of Khandeish.

SIR,—With reference to your Mahratta Yad of the 5th ultimo, with enclosure from the Secretary to the Asiatic Society of Bengal, requesting me to transmit any information along with specimens procurable of an Aerolite that fell in the month of July, 1843, in the vicinity

of the village of Manegaum of this talooka, I have the honor to transmit translation of a deposition given before me, by a couple of individuals who were spectators of the fall of the Aerolite in question, along with five small specimens of the same, all that I have been able to procure after much search ; these however I trust will be sufficient to indicate the nature of the Meteorolite.

I beg to return your enclosure, and to remain, Sir,

Your most obedient servant,

*Camp, Circuit at Rawere, C. INVERARITY, Actg. 1st Assist. Col.
Talooka Jaoda, January 1st, 1845*

Translation of a deposition given in Mahratta, by Goba Wullud Nagojee Chowdrie, and Hunmunta ud Dama Naik Solie, inhabitants of the village of Manegaum, Pergunnah Edulabad, turaf Jaoda, of the Khandesh Collectorate, who were spectators of the fall of an Aerolite in the vicinity of their village, in the month of July 1843.

On the day the Aerolite fell we were both seated, about 3 o'clock of the afternoon, on the outskirts of the village, in a shed belonging to Ranoo Patel. There was at the time no rain, but heavy clouds towards the Northward ; there had been several claps of thunder for about two hours previously, and some lightning. Suddenly, while we were seated in the shed, several heavy claps of thunder occurred in quick succession, accompanied with lightning, on which we both went out to look around us, when in the middle of a heavy clap, we saw a stone fall to the ground in a slanting direction from North to South, preceded by a flash of lightning. It fell about fifty paces distant from us ; on going up to it we found that it had indented itself some four or five inches in the ground ; it was broken in pieces, and as far as we could judge, appeared to be about fifteen inches long and five in diameter, of an oblong shape, somewhat similar to the *chouthe* grain measure ; it was of a black vitreous colour outside, and of a greyish yellow inside ; it was then of a mouldy* texture, and hardened to the consistence of the present specimens afterwards. Only one stone fell. No rain had fallen for eight days previously, nor did it, until four days after the fall of the stone. It had been warm all day before, but

* So in MSS. Perhaps muddy, i. e. soft, earthy texture was meant ?—H. P.

not much more so than usual. From midday until the time the stone fell, (3 P. M.) it was very cloudy towards the northward ; after its fall, the thunder ceased, and the clouds cleared away. No stone of a similar description had ever fallen near our village before. The pieces of the stone were immediately after carried off by the country people. Our village is situated on the banks of the small river the Poorna ; there are no hills in its vicinity, the nearest being three coss (or 6 miles) off. The above is a true statement, dated at Rawere, talooka Jaoda, on the 17th December, 1844.

(Signed.)

GOBA UD NAGOJEE CHOWDRIE.

„

HUNMUNTA UD DAMA NAIK.

True translation of the deposition given before me on the above date,

C. J. INVERARITY, *Actg. 1st Assist. Col.*

CHEMICAL EXAMINATION.

The specimens were referred to me for examination, of which this is my report.

The specimens are mainly composed of an earthy greyish white, pulverulent mass, slightly tinged with a bluish grey in some parts. It is excessively friable, and both crumbles and soils the fingers even when most delicately handled. In the earthy mass are thickly imbedded light, greenish, glassy particles of olivine, single and in nests, resembling green mica or felspar ; the appearance in some parts being almost that of an earthy variety of Lepidolite. On the side of one piece of Captain Abbott's specimens, is a bright black crust, thickly but minutely mammillated. When this is touched with the file it leaves a rusty mark, but gives no metallic trace. This crust is exceedingly thin, and splinters off, and in one place a mass of the olivine in it is melted to a green bead. It is too fragile, and our specimens too small, to attempt obtaining sparks from it. Two of Mr. Bell's fragments also have small portions of crusts yet adhering to them.

Internally and by the magnifier, a few bright white metallic points are discoverable, and in one or two places small nests of it ; there are also a few of a brown kind. We have one fragment of an Aerolite which fell in 1808, at Moradabad, which is pulverulent, but not so much so as the present specimen by a great deal. The present specimen is in this respect almost unique, as the only one I now recollect to have

read of as very pulverulent, is the one from Benares, mentioned in the Philosophical Transactions.

The Aerolite of Moradabad is studded over with rusty specks from the oxidation of the iron. All our other Aerolites are of a compact texture. I may note here, that we now possess in our collection, 10 specimens, comprising six varieties of Aerolites, and four of Meteoric Iron from Siberia, Brazil and India. One of the Society's Aerolites is also well entitled to be called Meteoric Iron, as it consists mainly of that metal, (and no doubt Nickel) rather than an Aerolite, by which we usually designate the more earthy looking stones.

The magnetism of the Kandes Aerolite is no where apparent except at the patch of pyrites (Magnetic Pyrites?) on the piece which has the crust, but here it is strong and distinct.

From its extreme friability I have not ventured to take its specific gravity, which is about 4 or 4.5, I judge, for it might crumble to pieces in the water, and is too rough and tender to admit of varnishing. Specific gravity however is an indication of no value in these heterogeneous compounds.

The green crystals, when examined separately, affect a somewhat rhomboidal or cubical form, but none are clearly defined. Their color is a bright, clear, and very light grass-green.

List of Meteorolites in the Collection of the Asiatic Society, 1st January, 1845.

1. Fell at Moradabad 1808, Captain Herring. One piece of this is rather friable. 3 pieces.
2. Dr. Tytler's Aerolite at Allahabad, 3 large pieces.
3. Aerolite fell about 40 miles to the West of Umbala, between the Jumna and Punja, 1822-3. Obtained by Captain Murray; given by Mr. J. Bird to Mr. Cracroft.
4. Fell at Bitour and Shapoor, 75 miles N.W. of Allahabad, 30th November 1822.
5. Fell at Mow Ghazeepore, February 1827, R. Barlow.
6. Fell at Manegaon in Kandeish, July 1843, Captain J. Abbott, B. A. and J. Bell, Esq. Bombay C. S. Collector of Khandeish.

Meteoric Iron, or stones having a large proportion of it.

1. Meteoric stone containing Iron and Nickel, fell at Pangoonor in 1811. Mr. Ross of Cuddahpah.
2. Meteoric iron, Siberia, Pallas.
3. Ditto ditto Sergipe Brazil, Mornay and Wollaston.
4. Lightning stone of Nepal, not examined, but may be Meteoric.

BLOWPIPE EXAMINATION.

The grass-green crystals above described: Per se infusible, but take a rusty brown appearance, as of semi-fusion or oxidation, on the exterior, remaining still translucent. *On Platina Wire*, with borax and phosphate of soda, fuses at first in part only (a lump remaining), giving a light clear olive glass; adding more of the flux it finally dissolves with various shades of olive and grass-green according to the proportions of assay and flux. A minute crystal in Mur: acid does not soften, gelatinise, or colour it by several days digestion. These are doubtless Meteoric olivine.

The white friable part, taken as free as possible from the grey specks and entirely so from the green crystals. *In the forceps* slightly oxidates to a rusty appearance at the outer part, but does not fuse.

On Platina wire and with Soda. Fuses to a dirty olive coloured bead, which in the reducing flame gives metallic iron with some earthy residuum. With Nitrate of Cobalt only a dull rusty colour. Hence the absence of Alumina, except perhaps in very minute proportion.

The metallic looking vein was assayed in various manners for Nickel, but no trace of it could be elicited, the vein being apparently pure pyrites. Nickel may nevertheless exist, though in small proportions, and we cannot venture on consuming more of these precious fragments, since the fused crust, the olivine, and the white matrix are chemical evidence enough of meteoric origin of the stone.

The whole of the dust which had collected in the paper, being carefully collected, was assayed both by the blowpipe and *via humida* for Chromium, but no traces were detected. As said of Nickel however above, so also of this substance: it may exist in minute proportion, though not detectable in such extremely small assays.

A few Notes on the subject of the Kumaon and Rohilcund Turae

By J. H. BATTEN, Esq., Civil Service.

Previous to the reign of the Emperor Akbar, that is, to the latter half of the 16th century, the history of Kumaon concerning the Turae. in connection with its lowland possessions, and also, of the Hill Raj of that name itself, is but imperfectly known.

Even to a still later period, tradition, confirmed by documentary evidence and the voice of general testimony in the neighbouring districts, takes the place, within the province itself, of all authentic written records on which reliance can be placed. The few Puthan families of respectability now settled in the Turae are, like their whole race in Rohileund, but a recently introduced colony. From them, therefore, it would be vain to look for any details connecting the series of events even in their own villages. The *Bhoksa* and *Tharoo* tribes, although permanent occupants in the whole jungle tract lying along the base of the Sub-Himalayan mountains between the Ganges and the Gunduck, are not, and never have been, permanent residents at any one spot; nor are they possessed of sufficient intelligence to know the tale of their own chosen region, or be able to recount the revolutions which have occurred on the scene of their migrations. Of the other tribes inhabiting the present villages or clearings in the Turae, it is not probable that many families can trace their settlement in that dismal wilderness, beyond the third, or utmost fourth generation preceding them. Rajah Sheo Raj Sing, the principal personage of the Turae pergunnahs, does not owe his present position in that tract of talooqdar, or manager, or farmer, or zemindar, (or whatever, under existing arrangements may be his proper designation,) to any direct descent from the Kumaon Rajahs, or to any long possession continued from their time to his own. Before his grandfather Lall Sing, accompanied by Mahundra Chund the representative, at least by immediate birthright, of the royal race of Kumaon, descended with their families to the plains, and became, by favour of the Nuwab Wuzeer, connected to the latter history of the Turae, intestine disturbances had begun to destroy the semblance even of a

central government in Kumaon, and the state records, such as they were, became scattered among the various *kamdars*, to whom they had been officially entrusted; and who only preserved such portions of them as might tend to prove their own importance, or that of their several families. During the troubles consequent on the Ghoorka invasion in the year 1790 A.D., the regular traces of past times became more and more obliterated; and when the last relics of the *Chund* Rajahs abandoned their native hills, and took refuge at *Kilpoory* in the plains, nearly the only place where they still possessed any thing like a property in the land, they took down with them no weighty burden of state records, and left but few behind. Afterwards at Roodurpoor, one chief scene of their exile, a fire occurred, which is stated to have consumed many family documents; while at Almora any *duster* or record office that existed, may be supposed to have commenced its collections only from the accession of the Ghoorkhalee Government. Under these circumstances, it is not a matter of wonder, that neither the British authorities in the hills, deriving their information from *kanoongoes*, and other usual depositaries of such knowledge, nor, the descendants of the Hill Rajahs in the persons of Sheo Raj Sing above named, or his cousin of the elder branch Per-taub Sing, now residing at Almora as pensioner of the English Government, should be able to furnish *exact* data, for an historic narrative.

2. Using such means as I have in my power, I proceed to draw a Turæe during the Ku- short and rough sketch of the successive revolu-
maon Raj, Kuttoora tions to which the country has been subjected,
Dynasty, Chund Dy- and, whenever possible, of its successive condi-
nasty, &c. &c. tions, in the hope, that such a description, however imperfect, may be found if not useful as evidence, at least acceptable as part of a picture, at a time when the attention of those in authority has been strongly drawn to the *present* state of the tract described.

3. The dynasty called *Kuttoora* is the earliest known to have reigned in Kumaon. The Rajahs of its line are said to have been of the *Sooruj-Bunsee* origin, and they have been clothed by the imagination of the *paharees* with almost divine attributes, while the extension of their authority to Delbie and Kanouj in the plains, and from Mundee to Siccim in the hills, is con-

fidently assumed as a matter of fact. The whole race* appear to have become utterly extinct, but, at what time and in what manner, no one can tell, and in fact their whole history is lost in the greatest obscurity. Within the present provinces of Kumaon and Ghurwal, *Josheemuth* near Budrinath, and *Kuttoor* not far to the North of Almorah in the now almost desolate valley of Byjnat, are celebrated as the principal seats of their power. The ruins still existing in the latter place, and at *Dwara Hath*, some miles to the westward, are pointed out as relics of the Kuttoor Raj, as are also the low carved stone pillars called *Brih-Kumbh*,† placed at intervals of a few miles, so frequent in the eastern parts of the district, and which are said to have marked the halts or encampments in the royal progresses. Some of these ruins, especially the *chubootras* and wells, are not without beauty, at least in their carving, and the great number of small temples even now standing, each as it were dedicated to a separate idol, and the quantity of idol images themselves, which have been found in their precincts, shew that the Kuttoora Rajas were devout worshippers of the whole Hindoo Pantheon. The shape of the buildings, and the character of the sculptures, are said to be similar to the architectural features observed in the South of India, but, I believe, that the same forms are quite common in Bundelcund and on the banks of the Nurbudda. From the account above given, it will at once be seen, that the dynasty of which we are speaking, was of lowland origin, and that no signs of an aboriginal extraction are visible in its remains. As, before the Mahomedan conquest of India, the rulers of a region so illustrious in the *Shastras* as the *Himalaya* mountains, being also by their position masters of the sacred rites at the various sources of the Ganges, may be supposed to have held rank equal with, if not superior to, the Rajahs of *Kuttair*, or country between the mountains and the Ganges now called Rohilcund; and, as after the establishment of the Mahomedan empire in Hindostan, the Kumaon Rajahs were found in hereditary possession of the Turæe by a tenure quite independent of any grant from lowland potentates, I see no reason

* At least that tribe of the Kuthooru *Suruj-bunsees* which reigned in Kumaon.

† This is *Bhákha* for *Brihstumbh*. बृहस्तव

for doubting that the Turæe throughout its whole extent formed an integral part of the Kuthoor Kumaon Raj. That it also formed an *important* part, may be assumed from the almost absolute necessity still existing, that a large portion of plain country should, if not attached to the hills, at least be available for the annual resort of the *Paharees* and their cattle; (an occupancy which under native rulers could hardly be maintained without an actual right of property in the soil, and actual separate possession thereof by the hill powers;) and from analogies drawn from the late and existing feeling in *Nepaul* in regard to the tract at its base. Beyond this, all is conjecture regarding those ancient times; and the question whether *Sumbhul* and *Bareilly* were then subject to Kuthoor, may be left for discussion between the *Paharees* and the *Desees*, when they meet annually at their now common pasture grounds, and need not engage the too jealous attention (as at one time it was feared it might,) of British functionaries.

4. The Kuttooras in Kumaon were, we are told, succeeded for *Khussia Raj*. some time (13 or 14 generations) by a *Khussia Raj*, that is, by numerous petty chiefs among the mountaineers themselves, each governing his own small territory, and fighting with his neighbours. The many small forts scattered throughout the province, in situations where such defences would be useless to a Government holding undivided authority over the whole tract, would seem to prove the truth of this traditional history.

5. On emerging at last, from this confusion, we find the earliest Chund Dynasty, name of the *Chund* dynasty in *Som Chund*, a *Chundrabunsee Rajpoot*, who is narrated to have come from the village of *Joosee* in the province of *Allahabad*, (Trans-Doab,) and to have established his power and a capital at *Chumpawut*,* at or about the year 1100 Saka, corresponding to 1235 Sumbut, and 1178 A.D. The *Joshee* (Jyotishee) Brahmins who have subsequently been such influential members of the hill community, accompanied the first of the Chunds to Kumaon. It would be quite out of place to register in this report, the list of Rajahs who followed *Som Chund*. Some per-

* Also called *Kalce Kumaon*, from its vicinity to the *Kalce* river.

sons, indeed, are found who deny the continuity of the dynasty altogether;* but, be that as it may, the historian of the *Turæe* has almost nothing to tell concerning any of the line previous to the 44th generation. *Roodur Chund*, son and successor of Rajah *Kullean Chund*, (who removed the capital from Chumpawut to Almorah, and built that city in 1620 St. or 1563 A.D.,) was a contemporary of the Emperor Akbar, and, in the course of his reign of 28 years, made frequent visitations to the Turæe, and, not to leave himself without record in the land, became the founder of *Roodurpoor*.

6. But, what is meant by the Turæe in Akbar's time? To what

Roodur Chund—Extent of lowland dominion did *Roodur Chund* of Kumaon Turæe in his time. succeed? Although an hereditary, was the Turæe an undisturbed possession of Kumaon in preceding times? On a reference to co-temporaneous history, we find that the year 1194 A. D., is the date generally fixed for the conquest of *Kanouj* by the arms of *Kutb-ud-Deen*, the Lieutenant of *Shahab-ud-Deen*, and, also, that 1195 A.D., saw him extend his victories across the Ganges to *Budayoon*. It is, I think, extremely probable, that an incorrect tradition may have anticipated the commencement of the Chund dynasty in Kumaon by sixteen years; and that, in the great revolution which transferred the empire of the Gangetic plain as far as *Benares* from the Rahtores to their Mahommedan victors, when the dispersion of numerous powerful Hindoo tribes took place everywhere, among them the earliest *Chund* and his followers found their way to Kumaon. But, whether the elevation of this race in the hills preceded or followed the fall of the Kanouj kingdom, the shock of that fall may well be supposed to have reached to the foot of the *Himalya*, and hardly to have been arrested at *Budayoon*, and the lower parts of *Kuttair*. The rule of the hill powers, whether *Khussia* or *Chund*, if it had survived at all the decadence of the

* It seems a matter of universal tradition that between the 8th and 9th succession of Chunds, a second *Khussia* Raj intervened; and also, that until the 11th of the line, by name *Lutchmee Chund*, some representatives of the old *Kuttoora* dynasty possessed a limited power at *Kuttoor* itself; but that in the reign of this Rajah, they were subdued by violence, or absorbed among the mass, or otherwise disappeared, and "the land knew them no more."

Kuttoora line, and the breaking up of that *Raj* into petty chiefships, must have been rudely shaken at this period. Even allowing, that subsequently, some kind of authority over this tract was regained, as the *Chund Rajahs* became, one after the other, more and more firmly seated on their mountain throne, the authority must have been one exercised under permission on account of tribute yielded to others, or, at best, under neglect or contempt on account of its intrinsic insignificance.

The *Puharrees*, indeed, while boasting of their ancient boundary on the south as *Gunga-wár*, or, not short of the Ganges, almost unanimously allow, that at one time, the possessions of their ancestors in the plains were woefully circumscribed, if not altogether lost; and that it was not without difficulty that *Udhian Chund*, the 30th of his line, attained by some means or other an honorable and determinate position in the *Des* for himself and successors. To continue, then, the story, and answer the remaining questions placed at the head of this paragraph, *Roodur Chund* found himself the lord of the *Muhals* or *Pergunnahs* named below:—

- | | | |
|--|---------------------|-----------------------|
| 1. <i>Suhajgeer</i> , | now called | <i>Juspoor</i> . |
| 2. <i>Casheepoor</i> or <i>Kotah</i>, | ..... | <i>Casheepoor</i> . |
| 3. <i>Moondia</i>, | ..... | <i>Bazpoor</i> . |
| 4. <i>Guddurpoora</i>, | ..... | <i>Guddurpoor</i> . |
| 5. } | | |
| 6. } | <i>Boksar</i> , ... | { <i>Roodurpoor</i> . |
| | | { <i>Kilpoory</i> . |
| 7. <i>Bukshee</i>, | ..... | <i>Nanukmutta</i> . |
| 8. } | | |
| 9. } | <i>Chinkee</i> , | { <i>Bilheree</i> . |
| | | { <i>Surbna</i> . |

This whole tract, which is exclusive of the Upper *Bhabur* nearer the hills, (of which I shall have to speak hereafter,) was called *Chourassee Mal*, and *Noulukhia Mal*, 'mal' being, then as now, the hill term for the low country. The former name was derived from the size of the territory, which was reckoned at 84 *coss* in length,—the latter name from the real or nominal revenue of the territory; viz., nine *lacs*. The boundaries on the west were the *Peera* or *Peela Nuddee* at *Raipoor*

between *Juspoor* and the *Ramgunga*; on the north the *Ookhur Bhoomee*, or, region of no water,—(now the *bun* or forest;) on the south the higher ground of the regular plains according to certain old known limits of the Pergunnahs; and on the east the *Surjoo* or *Sardah* river near *Poorunpoor*. The reign of *Roodur Chund* was not entirely without troubles, for during *Akbar's* minority, the Imperial officers attempted to resume the territory, and sent a force for that purpose. The young Rajah, however, made a successful resistance, and afterwards proceeded to *Delhi*, where he obtained favor at the Court of the Emperor, and distinguished himself in some expedition against *Nagor*. The final result of this step was his obtaining a *sunnud*,* for the *Chowrasee Mâl†* Pergunnahs, and his return to the hills with enhanced power.

7. In the time of his immediate successor, *Lutchmee Chund*, (still in the reign of Akbar,) the royal armies appear to have revisited the Turæe, and their places of encampment are still pointed out at *Tandah*, and more especially at *Peepulhutta*, where there is a mango grove called the *Badshahee Bagh*. Fourth in descent from *Roodur Chund*, we find *Tremul Chund*, Rajah of Kumaon, between the years 1625 and 1638 A.D. During part of this period, the Turæe is stated to have attained a high degree of prosperity, and to have actually yielded nine laks of rupees from various sources of revenue to the hill treasury; but, before the death of *Tremul Chund*, the prosperity of the tract excited the envy of its neighbours, and encroachments began to be made by the *Kuttair* Hindoos, not disallowed by their Mogul rulers. His successor, *Baz Bahadoor Chund*, finding himself in danger of total dispossession from these fertile lowlands, repaired to *Delhi*, and imitating the conduct of his ancestor, entered into the military service of the Emperor, *Shah Jehan*. He accompanied the Imperial expedition against *Candahar* and *Cabul*. A fortunate opportunity occurred, and the division which the Rajah commanded was able to gain some important advantage. Consequently, on the return of the royal armies

Successors of Roodur
Chund to Bag Bahadoor
Chund.

* Not now existent at Almorah.

† Some persons incorrectly consider this word as an abbreviation of the Persian word *Muhal*.

to Delhi, *Baz Bahadoor Chund* was honored by many signal marks of favor, but not content with obtaining empty titles, he adhered to the original object of his visit, and procured the full recognition of his right to the *Chourasee Mal*, together with an order, addressed to the Viceroy of the *Sooba*, for effectual assistance against the *Kuttair* chiefs. Through the aid of *Nuwab Roostum Khan*,* he succeeded in expelling his enemies from the *Turaee*, and he afterwards caused the town of *Bazpoor* to be built, and to bear his name. It is said that “every *beegah* and *biswansee*” was cultivated at this time, and that the construction and repairs of bridges, *bunds* and water-courses was diligently cared for by the officers of government. These functionaries resided at *Roodurpoor* in the plains, and at *Barokheree* and *Kotah* on the spurs of the lowest range during the hot months. *Casheepoor* was not then a place of any importance, and the *Puharrees*, (I know not how correctly,) even place the foundation of the present town and gardens at a period more recent than the *Rajas* hitherto named. At *Kotah* and *Barokheree* and elsewhere in the lower hills are remains of forts and residences, and mango groves, which go far to shew, that the climate at those sites was not in former times so insalubrious as at present, when few men in power would confine their retreat from the *Turaee* heats to such low elevations in the mountains as these. *Kotah*, indeed, is stated to have been the capital for all the western portion of the *Chourasee Mal*, and to have given its name to the lower *Pergunnahs*, and not only, as now, to the near submontane region. The good fortune of *Baz Bahadoor Chund* followed him to the end. He wrested the dominion of the *Bhote* passes from his Northern *Tartar* neighbours;—he associated his name with universal prosperity in the minds of his *Kumaonee* subjects;—and he died, after a rule of forty years, in the year 1678 A.D., during the reign of *Aurungzebe*.

8. If I were writing a connected history of Kumaon, the five successions of *Rajahs* between *Baz Bahadoor Chund* and *Kullean Chund*, would afford me ample material, both for narrative and comment: for during this period the prosperity of our hill principality having attained its culminating

History continued to the time of the *Rohillas*.

* The founder of Moradabad.

point,* began rapidly to decline, and the descent to ruin was marked by civil war with its disastrous accompaniments of royal assassinations and popular anarchy—a fitting prelude to the foreign invasions which followed in due course. But the important epochs in the history of the Kumaon Turæe need alone occupy our present attention, and passing over the half-century to which I have alluded, I arrive in the year 1653 Saka, or 1731 A.D., at the accession of *Rajah Kullian Chund*. The Rohilla chief, *Ali Mahommed*, at or soon after this period, succeeded his converter and adopter *Daood Khan* in the powerful position acquired by the latter ;—the splendours of *Budayoon*, the old capital of the *Sircar*, had begun to pale before the display of upstart military importance at *Aonla* ;—and in short, *Kuttair* was fast becoming *Rohilcund*.† In the earlier part of his rule, *Kullean Chund* had to contend against the aggressions of *Nuwab Munsoor Ali Khan*,‡ who attempted to attach *Surbna* and *Bilheree* to the neighbouring (Trans-Sardah) *Chuckladarship* in *Oudh* ;§ but, by a successful appeal to the Emperor *Mahommed Shah*, the nominal integrity of his Turæe possessions was preserved to the Kumaon Rajah. During his latter years he suffered from a far more terrible enemy ; but let me here snatch from oblivion an important record of the times immediately preceding the invasion of Kumaon by the Rohillas, which has fortunately survived the ruin of that æra.

* *Oodeetchund*, the immediate successor of *Baz Bahadoor Chund* and *Juggut Chund*, the third in descent, bear a high name in *Pahurree* history. In the time of the latter, nine lacs are again mentioned as the revenue of the Turæe ; but after this epoch, the intestine disturbances became utterly destructive of all prosperity, both in High-lands and Lowlands.

† बैसीसै अैसे करी ॥ देषो प्रभुके ठाट ॥

आंबले को राजाभयो ॥ वांको लीको जाट ॥

Waise se aise kuree dekho Prubhooka tat !

Aonle ko Raja bhojo—Bâkolee ko Jat.

This popular distich concerning the sudden rise of *Ali Mahommed* is well known in Kumaon.

‡ Afterwards called *Sufter Jung*.

§ *Seebdeo Joshee*, the Prime Minister of *Kullean Chund*, was wounded in a fight with the *Chuckladar Tejoo Gor*, and was taken prisoner, but subsequently released.

Table of Revenue Statistics in the Munes (Mudh-des) Pergunnahs of Kumaon for the year 1666 Saka, corresponding to 1801 Sumbut, and 1744 A.D. furnished by Kishuanund Udkaree, descendant of the former Tehseldars of the Turree, and now inhabitant of Mouza Rutgul, Puttee Uttagoolee Pergunnah Baramundul, Zilla Kumaon.

Name of Pergunnah.	Rubbee Har-vest.	Khureef Har-vest.	Khureef Purbee (Holidays.)	Rachha (Juneo, &c.)	Saer (Miscellaneous.)	(Gaming tax.) Jooake bach.	Teeka. (Nuzzurana.)	(Fruit tax &c.) (Khirchee Merva-jat.	Total annual.
	Rupees.	Rupees.	Rupees.	Rs.	Rupees.	Rupees.	Rs.	Rupees.	Rupees.
Kasheepore, &c.	1,00,000	1,00,000	5,500	474	20,000	713	501	1,001	2,28,189
Roodurpore Bilhary }	50,000	60,000	2,750	303	10,000	352	251	7,000	1,24,356
&c. }	25,000	20,000	1,675	208	25,000	172	150	500	72,706
Surbna,									
Total,	1,75,000	1,80,000	9,925	985	55,000	1,257	902	2,201	4,25,251

Note.—The Tuhseeldar of Casheepore and the Chaurasee Mal in general at the time of this statement was Permanud Udkaree. His grandfather Casheenath, in the time of Baz Bahadur Chund, is said to be the real founder of the present Casheepore, on the site of 4 villages, in which the temple of *Oojince Debee* was a place of old Hindoo pilgrimage. The son of Casheenath was called *Seonath*, and the village, of *Seonathpore*, and numerous mango groves near *Casheepore* and *Kotah* planted by him, still render his name immortal as the thriving and fortunate servant of *Chodeetchund*. His descendant *Kishna Nund Udkaree* possesses numerous *sumuds*, both on copperplate and paper, of that period.

All the reports made by the Kumaon *canongoes* and other natives belonging to the province, concur in fixing the nominal revenue of the *Chourasee Mal Pergunnahs* in the year 1744 A.D. (or one hundred years ago) at about the same sum as that named in the preceding statement; viz. somewhat more than 4 lacs of rupees, inclusive of all items. But, at the time of the Rohilla irruption in that year, the actual collections had dwindled to less than two lacs,* and as the whole lowland country, of which we are speaking, was virtually held in military assignment by the mercenary troops of the Rajah, known (from the place of their origin in the west) as *Nuggurkotia Sepahees*, it may be doubted whether in the time of *Kullean Chund*, at least previous to the expulsion of the *Rohillas* from *Kumaon*, any treasure ever ascended to Almorah at all. The present *Peshkar* of the *Huzoor Tuh-seel*, *Kishna Nund Joshee of Gullee*, has found among his ancestral papers a long list of villages, and of their respective *ruqbas*, the abstract of which I give below. It refers to an early year of *Kullean Chund*, 1657 Saka, or 1735 A.D.; but it unfortunately does not contain any information as to the proportion of waste to cultivated land.† It may, however, be found interesting, as shewing the number of villages standing on the rent roll at that time, and as affording data for comparison with the state of affairs in 1835 A.D., a date which (I know not how correctly,) I have heard mentioned, as that in which under British rule, Terrai matters were at their worst, and from which a renaissance of things may be assumed to have commenced.

<i>Pergunnahs.</i>	<i>No. of Villages.</i>	<i>Total Beegahs.</i>
Boksar, (Roodurpoor, Kilpoory,) ...	247	7,90,950
Bukshee, (Nanukmutta,) ..	139	3,83,300
Chinke, (Surbna-Bilherree,) ...	121	3,15,400
Casheepoor,	139	4,86,800
Suhujgeer, (Juspoor,) ...	59	1,58,400
Moondia, (Bazpoor,) ...	81	2,38,500
Guddurpoora,	83	3,31,200
Grand Total		27,04,550

* Only 40,000 rupees are mentioned in *some* of the records, but it is doubtful whether these referred to the whole or a part of the Turraee.

† *Kishna Nund Udkaree* also possesses very old lists of Terrai villages and their *beegahs*; but no account of *cultivation* or of *ploughs*. All these lists can be copied out *mouzahwar* if necessary, either in Hindee or Persian characters, and forwarded to H. H. the Lieut. Governor.

In the years 1666-7 Saka, 1744-8 A.D., the Rohillas twice invaded Kumaon, under their two leaders *Nujeeb Khan* and *Peinda Khan*. Though their stay was short,* its ill results to the province are well and bitterly remembered, and its mischievous, though religiously zealous character is still attested by the noseless idols and trunkless elephants of some of the Kumaon temples. The first irruption was only arrested in the very heart of the hills at *Ghyr-Mandee*,† near the sources of the *Ramgunga*. Here the *Rajah of Ghurwal*, *Pruteep Sah*, checked the further progress of the Rohillas, and turned them back by a bribe of three lacs of rupees to their leaders; and, thus, the holy land, which owned his Kumaon neighbour and himself as its princes and guardian, was relieved from its first contamination by Mahommedan contact.

The second invasion, caused by the discontent of *Ali Mahommed* at the small spoil brought down to him, was stayed at the very entrance of the hills at *Barokheri Pass* (between *Bhamouree* and *Bheem Tal*), where the Rohilla force was routed by the minister, *Seebdev Joshee* and his highlanders, who had seen too much of such visitors in the former year to allow them again to surmount the *Gaghur*. It is generally believed, that the Rohillas were incited to both attacks by some domestic traitors of the *Rotela* tribe, one of whom, by name *Himmut Sing*, had been put to death by the Kumaon Rajah for rebellious conduct. The complete expulsion of these predatory foreigners from the open plain of the Terrai was found too difficult a task for the *Puharree* arms; and, hence, recourse was had to other means. *Kullean Chund* himself repaired to the camp of the Emperor, then pitched at *Sum-*

* Those who object to the hill people of Almorah as being unaccountably and foolishly scrupulous on the subject of kine killing, forget that Benares, Muthra, and other Hindoo localities have been for centuries under direct Mahommedan rule, whereas Kumaon never had one of "the faithful" as its immediate lord. The only *Mussulmans* formerly known within the hills were certain families of *Shikarries* and *cooks*—who received favor at the hands of the Rajahs, the former for killing game, and for ridding the country of wild beasts, the latter for preparing suitable food for any Mahommedan guest of rank. The Rajah of Bhurtpoor still entertains a similar class of purveyors.

† Near this spot is the beautiful country residence of the Kumaon Commissioner, which is highly convenient, as being on the borders of both districts, Kumaon and Gurwal.

*bhul**, and implored for aid against his enemies. At that time (1747 A.D.), the extraordinary power obtained by the Rohillas had greatly alarmed the imperial Government, already sufficiently weakened by the Mahrattas and by Nadir Shah, and very strong efforts had been made to reduce them, attended with considerable success. Twenty-two descendants of the old *Kuttair Rajahs* are said to have been present in camp, headed by the chief of *Thakoordwara*,† all clamorous for protection. The Kumaon Rajah did not sue in vain, and the result of his visit to *Sumbhul* was a renewal of his *sunnuds* for the *Chowrasee Mal*, and the abandonment of the territory by the Rohillas, with the exception of the Eastern tract at *Surbna* and *Bilherree*, besides sundry marks of imperial favor. Soon after his return to the hills, he died, and the year of his death (1748 A.D.) also saw the decease of the Emperor Mahommed Shah and the adventurer Ali Mahommed.

9. The history of *Rohilcund* between the years 1748 and 1774 A.D. is well known. The constant conflicts

Reign in Kumaon of Deep Chund, and the contemporaneous account of Rohilcund to its conquest of by the Nawab Wuzeer of Oudh in 1774 A.D.

between the *Soobahdar* of *Oudh*, *Safter Jung* and the Rohilla chiefs, attended occasionally with no small disgrace to the arms of the former, (and through him to those of his master the Emperor *Ahmed Shah*,) terminated in the utter

discomfiture for a short period of the latter, by the introduction of the *Mahrattas* and *Jats* into the disputed territory as the formidable allies of the *Wuzeer*. Then followed, as might be expected, the usurping occupation of *Rohilcund* by those very allies themselves, and the attraction to that fertile quarter of their swarming countrymen from the *Deccan*. The revolutions which dethroned and blinded *Ahmed Shah*; which first exalted and then brought down to death his puppet successor, *Alumgeer II*; which linked together in the bands of temporary amity the regicide and self-elected *Wuzeer Ghazee-ud-Deen*, and many of the Mahratta leaders,—the advance of *Ahmed Shah Doo-ranee*, and the repetition at Delhi of some of the horrors enacted under *Nadir Shah*; and afterwards, on the departure of the *Abdallees* from *Hindoosthan*, the overwhelming height to which the flood of Mahratta

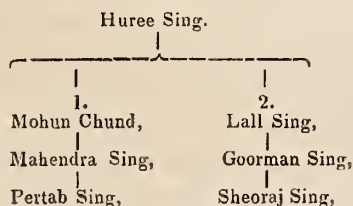
* I believe that the *Sote* then derived its name of *Yar Wufadar*, when the pukka bridge was built for the army, the Emperor having called it, “*Yar Wufadar dul tumun Sote*”

† Whose family is now, I believe extinct.

dominion attained ; these events accumulating on each other, involved the whole of Upper India in anarchy and confusion, and completed the destruction of the *Mogul* empire. As affecting Hindoosthan in general, they caused the minds of all men to be fixed on one great question, till the decision of which there could only exist two great parties ; viz. Who shall be masters, the *Mahrattas* or the *Affghans* ? As affecting *Rohilcund* in particular, the crisis of affairs united together by one common interest, the ruler of *Oudh*, then *Shoojah-ud-Dowla*, and the Rohilla chiefs, *Hafiz Rehmut Khan*, *Nujeeb-ud-Dowla*, and all the minor leaders of the clan ; and for a brief period, the chivalry both of *Oudh* and *Rohilcund* was engaged in a common cause. The battle of *Paneeput* might very probably have ended in a different manner, if the *Dooranee Shah* had not been thus assisted, and if he had not found on his side in that bloody field *Affghans* of the *Hindoosthanee* colony, as brave and undegenerate as his own *Abdallees*, fresh from the rugged passes of *Affghanistan*. Who on the evening of the 6th January 1761 A.D. contemplating that great battle field, and reflecting on its results, could have guessed or believed that the fate of India had really already been decided not five years before on an obscure swamp in Bengal ? or, have foreseen, that in regard to the sceptre of Hindoosthan, the slaughter of that day had been a fruitless sacrifice ; that the *Affghans* almost from that very hour would be strangers to the soil ; that the *Mahrattas*, then supposed to be an almost annihilated power, would again contest the throne of India with foreigners, but, of a still more distant origin and still more distinctive race ; or, that, finally, peace and plenty would smile on that very plain, invited to the land, neither by Mahomedan nor Hindoo, but by the Christians of a Western Atlantic isle ! Yet, to *Rohilcund* at least, (whereto my tale must return,) far different from peace and plenty were to be the intermediate gifts of the English race. When *Hafiz Rehmut Khan* flushed with his share of victory, returned to his own country, it may be assumed, that, even if no higher aspirations for the good of his subjects expanded his breast, he still fondly hoped that the good fortune of his race and family would henceforth be permanent ; that his last battle had been fought, and that he might be allowed to end his days in quiet and happiness. Alas ! the lapse of thirteen short years, not all ill-spent, we may hope, brought to

his door a totally unexpected enemy in purchased alliance with the ancient hunters of his line. If then at *Kutterah* on the 23d April 1774, the victorious English general turned away in sadness from the corpse of the gallant *Hafiz Rehmut Khan*, and reviewed with pain and disgust the results of his own triumph, the civil narrator of this tragical revolution, however indignant at the gross misrepresentations and false colouring of facts, which both in the senate and the library have associated the early English name in Rohilcund with altogether unredeemable shame, and the extinguished rule of the Rohillas with every fancied virtue, may be excused for pausing one moment in his task, and yielding the tribute of his deep regrets over the bier of the Rohilla chief. But I must not travel further from my record. What was the effect of all the above named revolutions on the circumstances of the *Terrai*? The reign of *Rajah Deep Chund* in *Kumaon*, after lasting nearly thirty years, ended in his murder in 1697 Saka, or 1775 A.D. He was, therefore, almost from first to last, a contemporary of *Hafiz Rehmut Khan*, and the catastrophes of the Rohilcund and Kumaon principalities occurred within a year of each other;—or, if nothing but the crowning success of the Goorkhas in 1791 A.D. can be considered as the conclusion of the Kumaon raj, the year of *Deep Chund's* violent death at the hands of *Mohun* Sing*, his spuriously descended cousin, may be recorded as commencing the fifth act of the hill tragedy. During the first sixteen years of his reign, *Deep Chund* enjoyed the advice and aid of the wise minister or *Bukshee*, *Seeb-dev Joshee*, to whose care the dying lips of *Kullean Chund* had entrusted the youthful prince. The trust appears to have been well fulfilled, and during this period the management of the *Terrai* occupied a large share of the *Bukshee's* attention. Forts were built at Roodurpoor and Casheepoor, as outposts to watch the Rohillas,

* As some mistakes are often made as to the relative position by birth of *Pertaub Chund* at *Almorah* and *Sheoraj Sing* at *Casheepoor*, I give their immediate genealogy :—



and to guard the property, then far from inconsiderable, at both those places. At the former place, *Hurree Ram Joshee*, a Kumaonee and cousin of Seeb-dev, and at the latter place *Sree Ram Doss*, a native (I believe) of *Bazpoor*, acted as the agents of the Kumaon government. The son of *Sree Ram Doss*, *Nundram* by name, is celebrated in Kumaon history, as the traitor, who in conjunction with his brother *Hurgovind*, for selfish purposes, ceded the possession of the Terrai to the *Nawab Asoph ud-Dowla*, after murdering Hureeram Joshee's son, *Munooruth*, and thus obtaining power over Roodurpoor and the Eastern Pergunnahs. The nephew of *Nundram*, and son of *Hurgovind*, *Seeb Lall*, is the person whom in 1210 Fuslee, the English found in power in the Terrai, and with whom the first settlement of that tract was made. We have now all the *dramatis personæ* on the stage, before the curtain drops on the scene, at the close of Kumaonese influence in the Terrai. During *Seebdeo's* administration, the Rohillas did not disturb in any great degree the tranquillity of the Kumaon lowlands. Their chiefs, during the frequent flights which they made to the foot of the hills when they had encountered any disasters below in conflicts with the *Wuzeer's* forces, formed an acquaintance with the hill Rajah and his Ministers, which in some cases ripened into friendship. *Deep Chund* and *Hafiz Rehmut Khan* exchanged turbans, and *Seebdeo's* son, *Hurackdeo Joshee*, who afterwards became so conspicuous a political character at the period of the war between the British and Nepalese, enjoyed a place of trust in the immediate household of *Nujeeb-ud-Dowla*. At the battle of *Paneeput*, *Hurree Ram Joshee* is said to have distinguished himself conspicuously amongst the levies brought to that place from the *Rohilcund* territory, and to have carried back to Kumaon an elephant and other plunder of the *Mahrattas* to the extent of some thousand rupees, which the *Rohilla* chiefs accorded in return for the aid or goodwill of the Kumaon Rajah at that great crisis.

10. The Terrai remained in a state of (comparatively speaking) fair

prosperity during that portion of *Deep Chund's* reign, in which the hill territory was undistracted by internal commotions. Up to the death of *Seebdeo Joshee* in 1686 Saka, corresponding to 1764 A.D., these commotions had been very partial and trifling in *Kumaon*, while at the same time

Conclusion of *Deep Chund's* reign.—Troubles of that period.—Effects of events, both in hills and plains, on the state of the Terrai.—And summary of events antecedent to the final separation of the lower Bhabur from the hill territory.

the plains of *Hindoostan*, including *Rohilcund*, were the scene of constant disturbances and change. The Terrai became filled with emigrants from the lower country, who had fled from the extra-taxation, and the multiplied masters, which the wars of that period had created. This was the first great recent emigration into the Terrai. The next extensive influx of lowlanders occurred immediately after the accession of the *Nawab Vuzeer*, as above related, to the sovereignty of Rohilcund, and continued till the tyranny of the new reign had somewhat over-past, and till (after the second Rohilla war with *Fyzoollah Khan*, who himself brought large numbers of people to the jungle, where his entrenchments were formed,) the lower districts became again fit for the habitation of peaceful and industrious people. Thus, at first, tolerable good government at one place, and intolerably bad government at another, contributed to the occupancy of the waste lands of the *Kumaon Bhabur*, by natives of other districts; and a few years subsequently, the *Ghoorkallee* invasion of *Kumaon*, and the civil wars which preceded that event, drove down numerous mountaineers to the same quarter, and made *Casheepoor*, *Rooderpoor*, *Kilpoory*, and other frontier towns and villages the emigrant settlements of numerous individuals, whose political importance or wealth rendered them peculiarly obnoxious to the evil of a revolution, and whose stay on the hills had become incompatible with their safety. We may, I think, date at this period the planting of the numerous mangoe groves* in the Terrai, which at this day so frequently surprise the sportsman, in spots where wild beasts occupy the place of human inhabitants, and swamps lie over the site of villages.†

The death of *Seebdeo* by violence in a military emeute at *Casheepoor*, occurred as above recorded in 1686 Saka, or 1764 A.D., and from that time I much doubt whether the dependency to the hill state of Kumaon of the whole Terrai (except a slip of forest at the very base of the hills,) did not cease and determine. While that minister sur-

* There are other groves of older date no doubt, as there are ancient wells, and *clubootras*, remains of aqueducts and the like; but the existing groves for the most part do not appear older than 60 or 80 years.

† Some *Puthan* families were great benefactors of the Turai for a short time, and the large *gools* and gardens which bear the name of *Jungee Khan* and others, attest their former influence, especially in Bazpoor and the western Pergunnahs.

vived, the rent roll of the *Chowrassie Mal Pergunnahs* is recorded to have been as follows; but, there is strong reason to believe, that both in the time of *Shoojah-ud-Dowla* and in that of his predecessor *Suftur Jung*, the *South-Eastern* extremity of the *Kumaon Bhabur* had fallen into the hands of the *Vuzeer* or the *Rohillas*, and that the *Kumaon Rajah* was merely considered in that quarter, *nominal Zemin-dar* or *Jagheerdar*.

Pergunnahs at present attached to Zillah Moradabad.

Jasspoor,	...	...	...	50,138	0	0
Casheepoor,	...	...	...	95,648	0	0
Bajpoor,	...	...	...	55,664	0	0
				<hr/> 2,01,440 0 0		

Pergunnahs now attached to Zillah Bareilly.

Roodurpoor,	...	...	...	72,207	0	0
Gudderpoor,	...	...	...	45,654	0	0
Kilpoory,	...	...	...	40,000	0	0
Bilheeree,	}	...	...	75,910	0	0
Bindara,						
Nanukmutta,						
Surbna,	..	..	...	25,000	0	0
				<hr/> 2,58,771 0 0		
				<hr/> Total Rupees 4,60,211 0 0		

Of this total sum, Rs. 1,32,000 were estimated as the *Rajah's share*, supposing the sovereignty of the Kumaon ruler in this tract to have been a reality; or *proprietary profits*, supposing him to be entitled only to the name of *Zemindar*. Out of this royal share or *revenue*, (the greater part of which was collected in kind,) the military assignments

* It is also highly probable, that some portion of this amount was collected on account of *kātāns*, or timber duties, in the forest lying to the north of the Chowrassie Mal, and still included in Kumaon.

to the *Nuggur Kotias* and others were paid, and Rs. 40,000 are (I believe with complete truth,) mentioned as forming the highest amount remitted to *Deep Chund's* treasury at *Almorah*.* In the earlier times of the *Terrai*, the *Rajah* dealt more directly with the cultivators of the soil, and the intervening tenures, religious, *mafee*, military, and the like, did not exist; hence, the large amounts recorded as *revenue*. In regard to the *cultivators*, the *Rajah's* share was considered to be a sixth of the produce; but, this fact would militate greatly against the stories handed down of the *Nowluckia Mal*. Fifty-four lacs worth of produce in the narrow slip of the *Chowrassie Mal*, would indeed have entitled it to a high rank among the many so-called gardens of India.

The remaining portion of the rental enumerated in the statement was collected for the benefit of some few Brahmin Mafeedars and some hill temples; but principally at that period by the headmen among the hereditary *Chokedars* of the *Terrai*, who had been gradually introduced into the territory from the time of *Baz Bahadoor Chund's* visit to Delhi. In the south-eastern extremity of the *Bhabur*, the race of *Burwaicks*, and in the same direction nearer the hills, the *Jooteals*, and in the Western Pergunnahs the *Mewattees* and *Heirees* (Mussulmans,) were the guardians, but in fact, the possessors of the soil; and a system of "black mail" was thus introduced, the evil effects of which remain to this day, and which during its continuance, rendered the sub-montane tract the general safe resort of the banditti, at the same time that it gave protection to a portion of the community; that is, those who could afford to pay the insurance fees thereof; and saved others from outrage and plunder only by making them connivers, through shelter and concealment, with the worst of criminals. *Hurrukdeb* Joshee* and *Jyekishen Joshee* succeeded their father as Ministers, and soon after both *Casheepoor* and *Roodurpoor* were plundered by predatory bands of *Patháns*, who are stated to have found a large quantity of booty at those places, owing to the temporary inhabitaney thereat, of the earlier emigrants of whom I have spoken.

* The direct lineal descendant of this personage, called by Mr. Fraser "the Earl Warwick, or king-maker of Kumaon," is, I am sorry to say, living in very reduced circumstances, and without a pension at *Almorah*, while others, with smaller claims are provided for.

The years between 1764 and 1775 A.D. formed a period of trouble and distress in Kumaon, which, however, has its parallel in every native state, and the natural consequences of which were the final foreign invasion which took place 16 years afterwards in 1791, and the intermediate visitations of mercenary troops brought into the province by the partizans of the several factions. A summary of events for this period exists in the Agent's office at Almorah, and is contained in a report dated 20th October, 1814, by Mr. W. Fraser, who appears to have received his chief information from *Hurruck-deb Joshee*. The following extract is made from the report,* explaining, quite sufficiently for the present purpose, the revolutions of that period within the hills.

Extract.

“The eldest son of Seebdeo Joshee, Jyekishen, succeeded him “in his office and situation as prime minister and viceroy, in which “place he continued for two years and a half, when a son was born to “Deep-Chund the Rajah. On this event the mother of the boy considering that in consequence of having a son, she had some claim on “the regency, intrigued with Hafiz Rehmud Khan of Rampoor, “through Jodha Sing of *Kuthere*, to whose son the daughter of the “Rajah was betrothed, and who was a favourite servant of Hafiz “Rehmud Khan, to set aside the authority and viceroyalty of Jyekishen, “who retaining his office, should obey the command of the Rannee. “Through the interest of Jodha Sing, Hafiz Rehmud was prevailed “upon to speak to Jyekishen, and he in disgust and disappointment “resigned all his situations and retired from the government. The “Rannee then bestowed the situation of Bukshee, or head of the “army upon Mohun Sing, the post of prime minister upon Kishen “Sing, the Rajah's bastard brother, and the viceroyalty on Purmanund, “a paramour of her own. Jodha Sing gained the management of “Casheepoor, a large Pergunna. About a year after this, the Rannee “deprived Mohun Sing of his appointment and insignia of his office, “bestowing them upon her favourite paramour. Mohun Sing fled to “the Rohillas, and through the assistance of Doondee Khan of Bis-

* Evidently a translation.

“soulee, who was jealous of the power and influence Hafiz Rehmud Khan exercised in Kumaon, gathered a body of troops and Rohillas, attacked the capital of Almorah, defeated the Rannee’s troops, and eight months after his expulsion, obtained possession of the Rajah’s and Rannee’s persons, and established himself in the government. One of his first acts was to put to death Purmanund, his first enemy, and about two years afterwards, during which time he continued quite paramount, he put the Rannee to death. When this act was known, Hafiz Rehmud Khan again sent an army with Kishen Sing, the brother of the Rajah, who had fled when the Rannee was killed, expelled Mohun Sing, and put authority into the hands of Kishen Sing, who with the assistance of Jyekishen, and the old respectable officers of the government, carried on business for four or five years. Mohun Sing had fled to the camp of Zabeta Khan, and subsequently to that of Shooja-ood-Dowlah. Kishun Sing, the viceroy of the Rajah, fell into bad hands, and paying attention to favourites, dishonoured many of the old respectable servants of the government. These people considering that Mohun Sing, although expelled, would not desist from disturbance and intrigue, agreed to call him, and put the government into his hands, to be exercised in the name of the Rajah, and with the assistance and advice of Jyekishen. Mohun Sing being thus placed in power, in the course of the second year put the Rajah and all his family into confinement, treacherously murdered Jyekishen,* and established himself firmly in the government. This usurpation seemed bad in the eyes of the Rajahs of Ghurwal and Dotie. They leagued with the discontented people of Kumaon; the injured family of Jyekishen, one of the oldest and most respectable of the high officers of Kumaon, collected a large force, defeated and expelled the usurper, and established Purdoo-mun Sah, the second son of Lulut Sah, the then Rajah of Ghurwal, upon the rajship. Purdoomun Sah reigned 9 years, proped by the old officers of the state, amongst whom the most noted was Jeeanund, Gudadhur and Huruckdeo, of the family of Seo Dev and Jyekishen :

* At that time Nundram and others had possessed themselves of the Terrai nearly to the foot of the hills, and Mohun Sing invited Jyekishen to his camp near *Chokum*, (some miles above Chilkeea,) to arrange for a common defence of the Terrai against the lowlanders. Jyekishen fell into the trap, came to camp, and was assassinated.—

“after this lapse of time, Lulut Sah, the Rajah of Sreenugur dying, the
 “brothers, Jykurut Sah who had succeeded to the rajship of Ghurwal
 “on the death of his father, Lulut Sah, and Purdoomun Sah who had
 “been set up in Kumaon, quarrelled. Jykurut Sah was desirous of es-
 “tablishing Mohun Sing in Kumaon to the prejudice of his brother,
 “having been bribed by him; and Purdoomun Sah was naturally
 “anxious to expel his elder brother and establish his younger and full
 “brother Puracram Sah at Sreenuggur. In the mean time, Jykurut
 “Sah died; and Purdoomun Sah leaving Kumaon against the will of
 “all, went to take possession of Ghurwal. He wished indeed to leave
 “his younger brother Puracram Sah in Kumaon, but he was equally
 “desirous of seizing upon Ghurwal; this strife continuing, both left
 “Kumaon in the charge of Hurruckdeo, and (shortly after uniting with
 “Mohun Sing) fixed him there. Hurruckdeo being driven out, collected
 “an army in the districts of Casheepoor and Roodurpoor, again attacked
 “Mohun Sing, took him prisoner and placed him in confinement, and
 “in retributive justice for the murder of the late Rajah and all his family,
 “had him put to death.* He did not continue many months in pos-
 “session of the country, when Lal Sing, the brother of Mohun Sing,
 “receiving the assistance of Fyzoollah Khan of Rampoor entered Kuma-
 “on, and drove Hurruck and his party to the frontier of Ghurwal, where
 “receiving assistance from Purdoomun Sah, he repelled the invading Ro-
 “hillas, and regained possession of Almorah, the capital. Puracram
 “Sah, however, always unsteady and unreasonable, took the part of
 “Lall Sing; and Hurruckdeo deprived of his assistance, retired with
 “honor to Sreenugur. Lall Sing did not however reign long. A year,
 “or a year and a half after, the Goorkha power invaded the country, when
 “all the discontented people, and particularly the family of Jyekishen and
 “Hurruckdeo took refuge with them and rejoiced in Lall Sing’s final
 “expulsion.”†

* Mohun Sing was beheaded in the temple called *Narain-ke-Than*, two miles to the North of Almorah, on the hill now called “Mount Browne.”—

† This report must throughout be taken *cum grano*, for though true in regard to the main facts, there is throughout a strong bias against the family of Mohun Sing and Lall Sing, and an equally strong partiality towards the great rival family of the Joshees. There is also one omission; viz. that Hurruck Dev at one time set up a nominal Rajah, a near relation of Deep Chund, and called him *Seeb Chund*, afterwards degrading him, and there is one exaggeration; viz. that Mohun Sing gave up

The murder of *Monoruth Joshee*, the agent of the Kumaon government at *Roodurpoor*, by *Nundram of Casheepoor*, an event previously glanced at, combined with the treacherous murder of *Jyekishen Joshee* by *Mohun Sing*, as narrated in the above extract, placed the whole power over the *Bhabur* tract at the disposal of *Nundram* and his family, and he took the best steps for securing his position, making terms with the *Nawab Vuzeer*, then *Asoph-ud-Dowlah*, and by becoming *Ijaradar* of the territory under that ruler. After two or three weak and ineffectual struggles in the field with the *Ghoorkas*, *Mahender Sing* and his brother *Lall Sing* were finally obliged to abandon the hills, and settled at *Kilpoory* in the *Terrai*, under the protection of the *Nawab Vuzeer*, obtaining thereby a guarantee for the retention, by the family, on some doubtful kind of tenure of some portion of the tract, over which their ancestors of the *Kumaon Raj* had ruled, and which as far as any actual *Jagheer* was concerned, was subsequently exchanged for the grant of *Chachheit*, which is situated in a more Southerly direction. Between 1791 and 1802, when the cession of Rohilcund to the British government took place, the *Ghoorkas* were too much occupied within the hills to bestow much attention to the old low-land territories of Kumaon; but they obtained for sometime possession of *Kilpoory*, and they were afterwards driven out by the forces under *Ata Beg* and *Sunbhonath* sent from Bareilly, aid having been implored by *Mahender Sing* and *Lall Sing* who had been forced to fly to *Luknow*,* and the danger on its northern frontier in *Rohilcund* having become a source of deep anxiety to the *Oudh durbar*. *Casheepoor* then became the principal residence of the exiled family; but *Roodurpoor* was also often visited, and from their statements, it would appear, at that time to have been a flourishing place. *Pertaub Sing*, indeed, informs me, that even until so late a period as 1815, when the march of the British troops to

Almorah to Rohilla rule, whereas this was not exactly the case; as *Mohun Sing* employed mercenary Rohilla troops who occupied at times the capital, so also did *Lall Sing*, and so did *Hurruckdeo*, and afterwards the British; but in all these visitations the Brahmins governed both Almorah and the province, and the Rohillas never even had a mosque for their prayers. *Hurruckdeo's* rescue of Almorah was thus, after all, not so very great an act of patriotism, as the report would appear to make it.

* *Hurruckdeo* about this time (1797 A.D.) was in attendance on Mr. Cherry at Luknow and Benares, and endeavoured to interest the British authorities in favour of the Hill Rajahs against the Goorkas.

the hills, combined with other visitations, more especially banditti, harassed the inhabitants by requisitions and losses of all kinds, that place* could boast of 1,200 *Brinjarries* with their equipage, 200 hackeries and their owners, 200 weavers, and 700 families of *choomars*, *koormees*, *lohars*, &c., in addition to a large agricultural population, and the numerous occasional followers of his father and uncle, with other exiles from the hills.

11. I have thus brought to a conclusion the history of Kumaon, chiefly in connexion with its dependencies in

The Government of the Nawab Vuzeer, and of the British. Reflections thereon and on the state of the country, with allusions to that part of the *Bhabur* still included in Kumaon —Conclusion.

the lower Terrai, otherwise called *Bhabur*, *Munes*, and *Mâl* by the *Puharrees*, and I believe that, however unimportant, the information thus given, is for the most part new. Knowing little, I can tell little of the further history of the Terrai, and it would be presumptuous in me to intrude on ground which belongs to the *Plains* authorities.† The abstract of all the intelligence acquired by me on this subject, may however be briefly recorded. The rule of the *Nawab Vuzeer* in the *Mal Pergunnahs* was, on the whole, beneficial, but, chiefly in a negative point of view. The bad government of districts, naturally more adapted for culture and habitation, drove large colonies of people from the south to a region where the background of the forest and the hills could always afford a shelter against open oppression; where the nature of the climate was not such as to invite thereto the oppressors in whose hand a whole fertile and salubrious land had fallen; and, where, also, on this very account, the rulers, who did exist, found it their interest to conciliate and attract all new-comers. The management of the territory in question by *Nundram* and *Seeb Lall* is generally well spoken of, except in the matter of police; but, even in this latter respect, the mismanagement was not more injurious to society, than the state of affairs in regard to the *forest-banditti* became in times not far distant from our own. I believe that it may be confidently stated, that at the commencement of the British rule in Rohilcund, there existed in

* *Roodurpoor* was partly ruined by the establishment of the Hill *Mundee* of *Huldwane*, 20 miles nearer the hills, and then completely, by the swamp caused by the Nawab of *Rampoor's Bund*.

† Not only present, but past

the Terrai a greater number of inhabited spots than there existed 30 years afterwards in the same tract; that more, and more careful, cultivation was visible in every direction; that the prairie, if not the forest, had retreated to a greater distance; that the *gools* or canals of irrigation were more frequent and better made; that more attention was paid to the construction and management of the *bunds* on the several streams; and that, finally, on account of all these circumstances, the naturally bad climate, now again deteriorated, had somewhat improved. While recording this statement, I must not omit to add, that I myself possess no positive separate proofs that my assertions are correct; but that I write under the influence of almost universal oral testimony, supported, nevertheless, by this circumstance; viz., that the revenue statistics of the tract under discussion, shew a *descending* scale in regard to the income of the state, a product which under general rules, bears an approximately regular proportion to the amount of prosperity in a country. Nor, must I omit the fact, that the *Boksa* and *Tharoo* tribes are extremely migratory in their habits, and are peculiar in requiring at their several locations more land for their periodical tillage, than they can shew under cultivation at one time, or in one year. To these tribes, is in a great measure *now* left the occupation of the Terrai territory, so that *now* for every deserted village, there may be perhaps found a corresponding newly cultivated one, within the same area; and large spaces of waste may intervene, where under the present system, no room for contemporaneous cultivation is supposed to exist; the periodical waste or fallow, also, in that peculiar climate, presenting as wild and jungly an appearance as the untouched prairie. In the times, on the contrary, which I have advantageously compared with our own, the fickle and unthrifty races whom I have named, were not the sole occupants of the soil, and the number of contemporaneous settlements was therefore greater, and the extent of land required for each was less. I, therefore, come round in due course to the next fact, (the obverse of that first stated,) that, as bad government in the ordinarily habitable parts of the country introduced an extraordinary number of ploughs into the borders of the forest tract, so, the accession of the British rule, by affording a good government to Rohilcund, re-attracted the agricultural resources to that quarter, and proportionately reduced the means

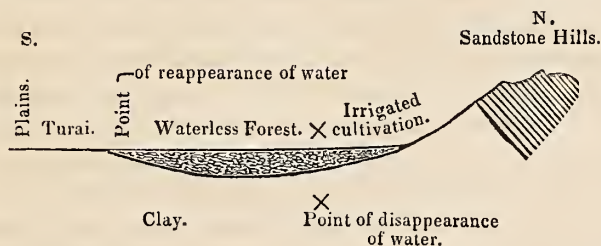
of tillage in the Terrai. Such is my general position; but, local circumstances also added to the deterioration; and amongst these, an allusion on my part is all that is necessary or proper to the hasty and perfunctory mode of settlement adopted in the earlier years of the British rule, to the disputes in and out of court, concerning *Zemindarry* rights between *Seeb Lall* and *Lall Sing*; and again between the latter and his elder brother Mahendra Sing's family; to the continued bad police management; and, perhaps more than all, to the neglect and difference of the English revenue officers, who were scared away from the tract by the bad reputation of its climate, and only occasionally attracted thither by its facilities for sport.

In fact, the sum of the whole matter is, in my opinion, this: that even long neglect in other quarters can by a change of system, be speedily remedied; but, that in the peculiar region of which we are treating, a very brief period of neglect or bad management is sufficient to *ruin* the country. Its physical character has been well described by others, but more especially and directly in the recent Irrigation Report of Captain Jones, and incidentally in the lately discovered and published Geological Report by the late Captain Herbert.* Under the base of the hills, surface irrigation from the several streams that issue therefrom, can be carried on without difficulty to a certain distance on either side of them by means of water-courses taken off at different levels, this distance or point of non-irrigation being determined by the slope of the country, and the absorbing or retaining qualities of the soil, and consequently by the time of disappearance of water in the several rivers. Hence, in the *Upper Bhabur*, so long as an agricultural population can be found, extensive patches of fine cultivation† will always exist; but, at wide intervals, and with but a short prolongation to the Southward. Then, succeeds the *okhur bhoomie*, or dry region of forest and prairie, beneath the rich mould and enormous beds of gravel of which, at an hitherto undiscoverable depth, flows the drainage of the lower mountains; the point of re-appearance of water

* Journal Asiatic Society, Vol. XI, the map published with Vol. XIII.

† The superficial soil in the Bhabur when well irrigated, supplies admirable crops of wheat, mustard and the like; but is said to be too light for sugar-cane, cotton and other staples; my own opinion is, that every thing could be produced, if the cultivators were permanent and of an industrious race, instead of being only *hibernating Puharrees*.

in the river beds, and the rushing out of the numerous springs being determined by the thinning out of the porous gravelly detritus, and the approach of the clay, or *impervious stratum* to the surface, thus :



The *Lower Bhabur*, or special Terrai, succeeds, and reflection and Lower Terrai. observation both shew, that if left to itself, this region must become one of swamps and malaria, and only partial cultivation; whereas, if carefully watched, its evils of climate may be vastly amended, and its agriculture be only limited by its amount of population. A careful guidance of the waters from their several sources would prevent the formation of the swamps on the lower edge of the forest. The rapid slope of the country causes the streams to push along the superficial gravel mixed with trees and vegetable mould, and thus to form at last an obstruction *a-head of themselves*. This causes numerous windings of the streams, and at every corner a back water swamp is produced, which would have had no existence, if the current had been carefully conducted, or if the obstructions in its course had been removed, or an opening through them been made. In the same manner the proper placing of the several *bunds* on the streams, and a proper attention to outlets of canals thus formed, would prevent the evils now arising from embankments which enrich one village, or set of villages, at the expense of the whole neighbourhood; and from water-escapes, which irregularly flood all the adjacent lands, and create grass *hoonduls* and swamps for tigers, deer, and hogs, while they drive out the human inhabitant.

These are common illustrations, and are sufficient to prove my argument for the absolute necessity of official and even scientific attention being paid to the physical character of the Lower Terrai, the additional benefits of a good revenue management, and a good police being,

at the present period assumed. I trust that the force of this argument will not be weakened by its not being *original*. The improvement of the *forest-tract* can be effected by the cutting of broad roads through it to the several points of access to the hills, and by extension of the *Puharree* clearings at its northern edge by a better and more economical distribution of the available means of irrigation. But, it still remains a matter for science to determine, whether except in the case of large rivers, (for instance the Ramgunga and Kosillah,) which on account of their volume and force escape absorption into the gravel, any canals can be taken off from *common* streams, at their exit from the mountains, and carried continuously through the forest. If they can, I would be content to sacrifice some portion of the partial cultivation carried on by the Hillmen at the immediate foot of the hills, by means of their numerous separate water-courses. If they cannot be made so as to bring a large and continuous portion of the forest and prairie into cultivation, I am hardly prepared to recommend much interference with the present system of irrigation in the *Upper Bhabur*, however wasteful, in the mere attempt to prolong a mile or two further the *Puharree* cultivation, and to add to the number of villages, paying almost nothing to the State, while they decrease the pasture grounds required by the herdsmen, both of the plains and the hills, at that very portion of the forest where the means of supplying water to the cattle alone exists.* As, however, the subject of the *Kumzon Bhabur* as distinct from the *Rohilcund Terrai* will form the subject of a separate report in the ordinary course of my official duties, and, as the upper tract is quite prosperous enough not to require any immediate special remedies, I here drop my pen.

Almorah, 9th October, 1844.

J. H. BATTEN,

Senior Assistant Commissioner, Kumaon Proper.

* The forest here alluded to, is almost utterly useless for timber, though its pasture grounds are admirable. All the valuable timber is now confined to the foot of the hills and to the lower range, and the *sissoo* islands in the river beds. This is a fact little known, but quite true.

The Osteology of the Elephant. From the India Sporting Review.

I am induced to take the following subject for my first essay in the pages of the *India Sporting Review*, (to which be length of days and unrivalled success,) by the simple fact, that of the engravings produced in Europe, affecting to be faithful representations of

“ The huge earth-shaking beast,
The beast that hath between his eyes
The Serpent for a hand”—

Scarce one in the dozen does not outrage nature most unmercifully ; of course I include under this head neither *all* illustrations of Zoology, nor the productions of artists, professional or amateur, resident in India: though in several lithographs after the latter, which have fallen under my inspection, I could point out errors, probably not existing in their original drawings while many of the former are radically wrong. The prevailing absurdity in the engravings I allude to, is giving the elephant *hocks* ! ! ! the perpetrators of which would appear to have adopted the idea (and selected their model accordingly) of the elderly Scotch lady in ‘ *The Last of the Lairds.*’ who exclaims, while admiring a painting of a tiger-hunt—“ Eek ! Sirs ! wha’d ha’e thought it?—that y’r *eelephant*, after a, should be naithing mair than a muckle pig wi a langer snoot,”—a deprecatory comparison truly of the animal on which Milton has deservedly bestowed the epithet “ half-reasoning.” Leaving his mental capacity in such excellent hands, I proceed to the object I have in view, a delineation of his bodily peculiarities, and of the machinery by which such a mass of living flesh and blood performs it’s functions.

It is well known that the sculptor or painter who should attempt the human form, without adequate knowledge of the osseous framework and its muscular clothing, would produce but a sorry resemblance of the paragon of animals ! In like manner, ignorance of the internal structure of the elephant, so unlike that of all other quadrupeds, has doubtless caused these numerous false drawings of it’s external appearance, and which I presume to think the annexed outlines will serve to rectify. The design of the first was sketched

some years ago for my own guidance, and shortly afterwards compared (in doing which I had the assistance of a sporting friend, no other than our own Asmodeus) with the articulated specimen in the Museum of the Asiatic Society. In the same apartment were skeletons of other mammalia—the *Rhinoceros Indicus*, *Felis Tigris*, *Felis Leopardus*, *Sus Scropha*, &c., and while viewed in Juxta-position with these, a casual observer might imagine the elephant deficient in the number of bones usually forming the legs. Not so, the comparative anatomist who detects the same plan regularly followed throughout all the class, varied only by the elongation, or otherwise, and arrangement of the carpal and metacarpal, tarsal and metatarsal bones, as also of the digital phalanges. The posterior extremities of our subject (due allowance being made for great difference in length and size) seem to approach more nearly to the inferior ones of the human skeleton than those of any other quadruped. The Vertical position of the sacrum adds to this similitude, while the lateral power bestowed by the articulation of the thigh and knee joints, is visible externally—as a favorite position of the animal, while tethered and at rest, is supporting the weight of his hinder quarters on one leg, while the other is thrown in a *stand at ease* manner across it, one foot resting carelessly upon the other.

Plate 1. The head, excepting the lower jaw, is drawn in section, showing the situation of the brain and its defences; also, the process of dentition, in which one, the foremost, grinder is seen to be superannuated and gradually disappearing; the next, the centre one, in present use, and the third decending to take the place of the last in due course. This singular system of decay and reproduction is said to occur eight times in the life of the individual.*

* I have now before me the skull of an elephant which died here about a year ago;—it presents the peculiarity of having no grinder on the right side of the lower jaw; whether this was a natural defect or the result of an accident is not known. If the latter, it must have happened many years ago, as the alveolus is entirely ossified over, a slight hollow alone appearing, while the corresponding grinder above, instead of having the usual jaggy polished under-surface, showing the arrangement of enamel and bony substance, is rounded and covered with the opaque cortical matter. Its predecessor, which is much reduced, and was attached to the head by only a single root, is also rounded below, but is slightly polished, with some of the enamel appearing.

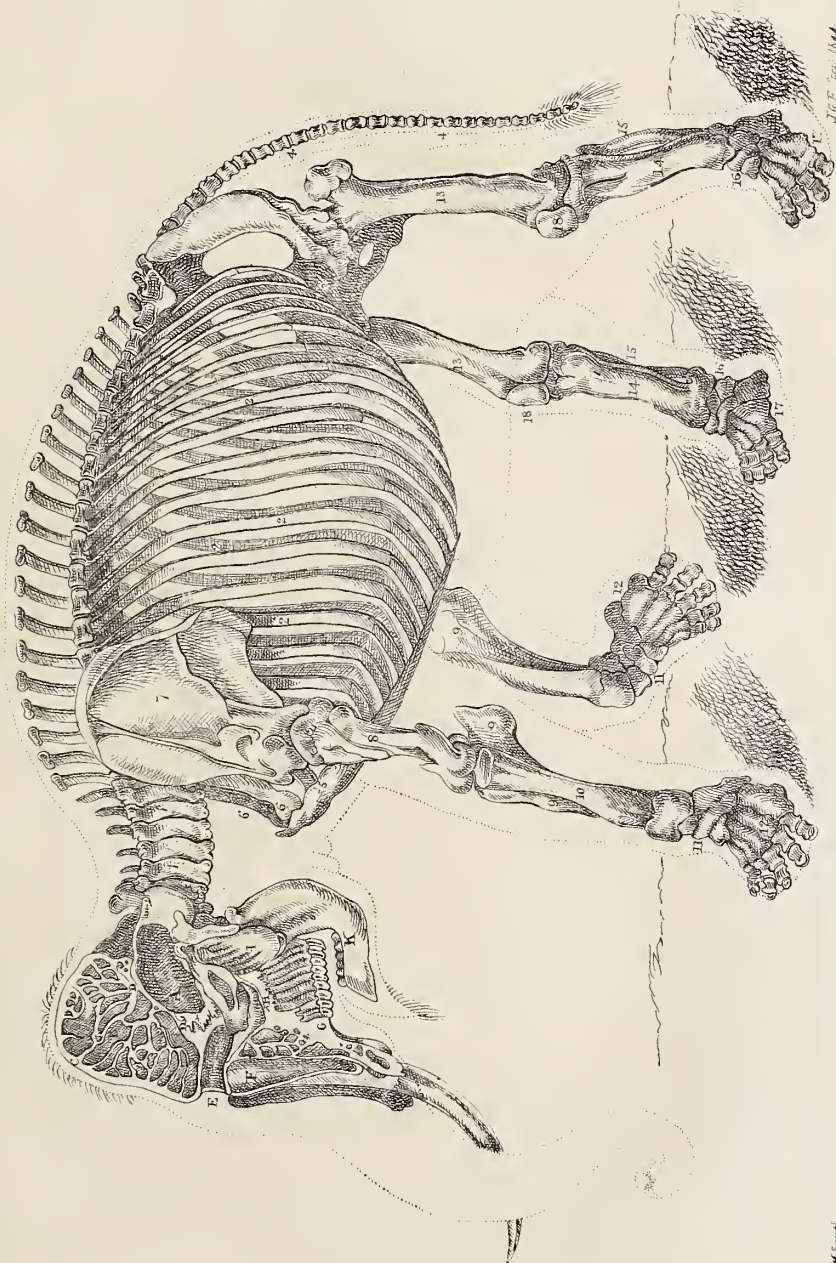


Fig 1.



Fig 2.



- A. Cavity of the brain.
- B. Space occupied by bony cells, between
- C. the outer, and
- D. the inner tablets of the Skull.
- E. Opening of the nostrils.
- F. Alveolus of the tusk.
- G. Old molar in a state of diminution and decay.
- H. Perfect molar.
- I. Embryo molar, progressing forwards and downwards.
- K. Inferior maxillary.
- 1. Cervical vertebræ, 7 in number.
- 2. The ribs—19 on each flank.
- 3. Bones of the Sacrum.
- 4. The caudal vertebræ, 24, in number.
- 5. The Sternum.
- 6. The clavicles. (?)
- 7. The Scapula.
- 8. The humerus.
- 9. The ulna.
- 10. The radius.
- 11. The Carpus, comprising 7 bones.
- 12. The metacarpus, and interior digital phalanges, five in each foot.
- 13. The femur.
- 14. The tibia.
- 15. The fibula.
- 16. The tarsus.
- 17. The metatarsus and posterior digital phalanges, four in each foot.
- 18. The patella.

Plate II, Fig I. An elephant descending a bank of too acute an angle to allow of his walking down it laterally, which, were he to attempt doing, his huge body, soon exceeding the centre of gravity, would certainly topple over. His first manœuvre is to kneel down close to the edge of the declivity, having his chest upon the ground; one fore leg is then carefully passed a short way down the slope, and if there is no natural projection adapted for firm footing, a step is speedily kicked out of, or pressed into the soil, according to the state of dryness or moisture it may be in. This point gained, the other

fore leg is also brought down, and performs the same work a little in advance of the first, which is now at liberty to move still lower—when, first one and then the other hind leg is cautiously slid over the side, and the hind feet in turn occupy the resting-places made, used, and left by the fore ones; and so on, the course not being direct from top to bottom, but sideways, until the level be regained. This is done at more than an angle of 45, while the animal has the weight of a howdah, it's occupant, his attendant and sporting apparatus, adding to the difficulty of the performance; and that in a much less space of time than would readily be imagined.

Plate II. Fig. 2. Represents the reverse of fig 1., viz., an elephant ascending a similarly steep bank by the same process, except the kneeling down at the commencement.

I had some idea of adding a third drawing, that of a complete figure of the elephant, undefaced by lines, dots, figures, or letters; but as I purpose sending you a series of Tiger-hunting Scenes, you and your subscribers (should my attempts be thought worthy of being submitted to the engraver or lithographer) will have specimens enow of the *Elephas Indicus* ere the Review be much older.

Dacca, Dec. 1844.

J. G. F.

P. S.—Since writing the above, I have received a Zoological work, which fully bears me out in the strictures with which I commenced this paper. It is lettered “Naturalist’s Library. Mammalia, Vol. V., Elephants, &c.” Many of the volumes of this work are well got up, and contain tolerably faithful illustrations of the letter-press: but here, again, the elephant meets with his usual misrepresentation: *Imprimis*,—The title-page presents us with a vignette purporting to be “The elephant of India, caparisoned,” and behold a ‘*monstrum horrendum, informe ingens*,’ with hocks of course whose forebears, after their kind, never saw the inside of the Ark, I’m very certain. But making some allowance for a vignette, turn we to the body of the book, and next find Plate II., “Elephant of India,”—differing from the vignette ’tis true, but not a whit nearer to nature;—hocks again, line of the belly horizontal, more mounds on his back than the Bactrian camel’s, and length enough from proboscis to tail for an elephant and three-quarters. Plate III. “Elephant of India, caparisoned for hunting.” Very faulty, but a visible improvement on

the foregoing:—and why? The plate is a pictorial plagiarism on one of Captain Mundy's "Pencil Sketches," which has however undergone the change which Sheridan somewhere says is effected by literary appropriators on their pilfered ideas, "they treat them, as gipsies do stolen children, disfigure them, that they may pass for their own." Here we have the ankle joints so prominent, and placed so high up the legs, as to assume all the appearance of *hocks*—the tail absurdly short, and the under outline of the body perfectly straight, whereas it should descend rapidly from the elbow joint of the fore leg to the knee of the hind one.

QUERIES RESPECTING THE HUMAN RACE, *to be addressed to Travellers and others. Drawn up by a Committee of the British Association for the Advancement of Science, appointed in 1839, and circulated by the Ethnographical Society of London.*

[The Editors have thought this paper of so much importance that they have lost no time in re-printing it, as pointing out to so many residents in India a kind of knowledge which they may so easily acquire and communicate, and which offers so many points of interest to every thinking mind. The more savage races of India from the Veddas of Ceylon to the Goands and the races of the Terraes, with the Singphos and Kariens of our Eastern Frontiers, to say nothing of the Coles, Dhangurs, Sontals and Goomsoor tribes, and many others, all offer fields of research, from which, undoubtedly, many scientific laurels are to be gathered, and eventually much useful knowledge and many humane results may arise.—Eds.]

At the meeting of the British Association held at Birmingham, Dr. Prichard read a paper "On the Extinction of some varieties of the Human Race." He pointed out instances in which this extinction had already taken place to a great extent, and showed that many races now existing are likely, at no distant period, to be annihilated. He pointed out the irretrievable loss which science must sustain, if so large a portion of the human race, counting by tribes instead of individuals, is suffered to perish, before many interesting questions of a psychological, physiological and philological character, as well as many historical facts in relation to them, have been investigated. Whence he argued that science, as well as humanity, is interested in the efforts which are made to rescue them, and to preserve from oblivion many important details connected with them.

At the suggestion of the Natural Historical Section, to which Dr. Prichard's paper was read, the Association voted the sum of £5 to be

expended in printing a set of queries to be addressed to those who may travel or reside in parts of the globe inhabited by the threatened races. A Committee was likewise appointed by the same Section to prepare a list of such questions. The following pages, to which the attention of travellers and others is earnestly invited, have, in consequence, been produced. It is right to observe, that whilst these questions have been in preparation, the Ethnographical Society of Paris has printed a set of questions on the same subject for the use of travellers.* It has been gratifying to perceive the general similarity between the questions proposed by the French savans who compose that Society, and those which had been already prepared by the Committee; but the Committee is bound to acknowledge the assistance which, in the completion of its task, it has derived from the comprehensive character and general arrangement of the Ethnographical Society's list. The following queries might have been considerably extended, and much might have been added to explain the reasons and motives on which some of them are founded. Such additions would, however, have inconveniently extended these pages, and, in part, have defeated their object. The Committee has only further to express its desire that the Association may continue its support to the interesting subject of Ethnography, and that their fellow-members will aid in bringing these queries under the notice of those who may have it in their power to obtain replies. Britain, in her extensive colonial possessions and commerce, and in the number and intelligence of her naval officers, possesses unrivalled facilities for the elucidation of the whole subject; and it would be a stain on her character, as well as a loss to humanity, were she to allow herself to be left behind by other nations in this inquiry.

It will be desirable, before giving direct answers to the questions proposed in the following list, that the traveller should offer, in his own terms, a description of the particular group of human beings, which he may have in view in drawing up his list of answers, seeing that the replies, however accurate and replete with useful information, may fail in some particulars to give a complete idea of the people to whom they relate.

* Reprinted Jour. As. Soc. vol. x. p. 171.

Physical Characters.

1. State the general stature of the people, and confirm this by some actual measurements. Measurement may be applied to absolute height, and also to proportions, to be referred to in subsequent queries. The weight of individuals, when ascertainable, and extreme cases, as well as the average, will be interesting. What may be the relative differences in stature and dimensions, between males and females?

2. Is there any prevailing disproportion between different parts of the body? as, for example, in the size of the head, the deficient or excessive development of upper or lower extremities.

3. What is the prevailing complexion? This should be accurately defined, if possible by illustrative and intelligent example, such as by comparison with those whose colour is well known. The colour of the hair should be stated, and its character, whether fine or coarse, straight, curled, or woolly. The colour and character of the eyes should likewise be described. Is there, independently of want of cleanliness, any perceptible peculiarity of odour?

4. The head is so important as distinctive of race, that particular attention must be paid to it. Is it round or elongated in either direction, and what is the shape of the face, broad, oval, lozenge-shaped, or of any other marked form? It will contribute to facilitate the understanding of other descriptions, to have sketches of several typical specimens. A profile, and also a front view should be given. In the profile, particularly notice the height and angle of the forehead, the situation of the meatus auditorius, and the form of the posterior part of the head. It will also be desirable to depict the external ear, so as to convey the form and proportion of its several parts. The form of the head may be minutely and accurately described by employing the divisions and terms introduced by craniologists, and the corresponding development of moral and intellectual character should in conjunction be faithfully stated. So much of the neck should be given with the profile as to show the setting on of the head. The advance or recession of the chin, and the character of the lips and nose, may likewise be given in profile. The front view should exhibit the width of forehead, temples, and cheek-bones, the direction of the eyes, and the width between them: the dimensions of the mouth. When

skulls can be collected or examined, it would be desirable to give a view in another direction, which may even be done, though with less accuracy, from the living subject. It should be taken by looking down upon the head from above, so as to give an idea of the contour of the forehead, and the width of the skull across from one parietal protuberance to the other.

5. State whether the bones of the skull are thick, thin, heavy, or light. Is it common to find the frontal bone divided by a middle suture or not? Note the form of the outer orbital process, which sometimes forms part of a broad scalene triangle, with the vertex downwards. How are the frontal sinuses developed? Observe whether the ossa triquetra are frequent, or otherwise; whether there be frequent separation of the upper part of the os occipitis; the relative situation of the foramen magnum. In regard to the bones of the face, notice the position of the ossa nasi and unguis; the former sometimes meet nearly or quite on the same plane, whilst, in others, they meet at an angle. The former character is strongly marked in many African skulls. State the form of the jaw-bone, shape of the chin, and observe the angle of the jaw, the position and character of the teeth, and their mode of wear; and if they have any practice of modifying their form or appearance, let this be stated. The malar bones have already been noticed, but they may require a more minute description.

6. When the opportunity can be found, observe the number of lumbar vertebræ, since an additional one is said to be common in some tribes.

7. Give the length of the sternum as compared with the whole trunk; and also some idea of the relative proportion between the chest and the abdomen.

8. What is the character of the pelvis in both sexes, and what is the form of the foot?

9. The form of the scapula will also deserve attention, more especially as regards its breadth and strength; and the strength or weakness of the clavicle should be noticed in connection with it.

10. The internal organs, and blood-vessels will with greater difficulty be subjected to examination; but it may be well here to remark, that varieties in these may prevail locally in connection with race.

N.B.—Peculiarities may exist, which cannot be anticipated in queries, but which the observer will do well to notice amongst his answers to anatomical questions.

11. Where a district obviously possesses two or more varieties of the human race, note the typical characters of each in their most distinct form, and indicate to what known groups or families they may belong: give some idea of the proportion of each, and state the result of their intermixture on physical and moral character. When it can be ascertained, state how long intermixture has existed, and of which the physical characters tend to predominate. It is to be observed, that this question does not so much refer to the numerical strength or political ascendancy of any of the types, but to the greater or less physical resemblance which the offspring may bear to the parents, and what are the characters which they may appear to derive from each: whether there is a marked difference arising from the father or the mother belonging to one of the types in preference to another; also whether the mixed form resulting from such intermarriage is known to possess a permanent character, or after a certain number of generations to incline to one or other of its component types.

12. Any observation connected with these intermarriages, relating to health, longevity, physical and intellectual character, will be particularly interesting, as bringing light on a field hitherto but little systematically investigated. Even when the people appear to be nearly or quite free from intermixture, their habits, in respect of intermarriage within larger or smaller circles, and the corresponding physical characters of the people, will be very interesting.

13. Do the natives speak a language already known to philologists, and if so, state what it is; and notice whether it exhibit any dialectic peculiarities, as well as the modifications of pronunciation and accentuation which it may offer. State also the extent to which this dialect may be used, if limits can be ascertained.

14. If the language be little if at all known, endeavour to obtain a vocabulary as extensive as circumstances will allow, and at least consisting of the numerals, the most common and important substantives*, the pronouns in all persons and numbers, adjectives expressive of the commonest qualities, and, if possible, a few verbs

* The names of mountains, lakes, rivers, islands, &c.

varied in time and person. The vocabulary should be tested by the interrogation of different natives, and more than one person should be engaged in taking it down from their mouths, to avoid, as far as may be, errors arising from peculiarities of utterance or defect of hearing. It is likewise of importance that the system of orthography be duly indicated and strictly adhered to.

15. Endeavour to take down some piece of native composition, such as the ordinary phrases employed in conversation, and any other piece of prose which may be attainable; and specimens of metrical composition if such exist. Though these would be of comparatively little use without translation, yet independently of this some importance is to be attached to the metrical compositions if they have a national character and are widely diffused; and, in this case, it might be possible to express some of their airs in musical characters. A specimen of known composition translated into their language, may also be given, such as the first chapter of Genesis, the fifteenth chapter of Luke's Gospel, and the Lord's Prayer.

16. Endeavour to ascertain whether the language is extensively spoken or understood, and whether there are different languages spoken by men having similar physical characters obviously connecting them as a race, or if differing somewhat in this respect, inhabiting a particular geographical tract. When such groups are said to possess different languages, endeavour, as far as possible, to ascertain their number, the sources whence each is derived, and the languages to which it is allied; and also the circumstances, geographical or political, which may account for these distinctions.

[For further information connected with the investigation of languages, reference is made to a short essay on this subject read to the Philological Society of London.]

17. Are there any ceremonies connected with the birth of a child? Is there any difference whether the child be male or female?

18. Does infanticide occur to any considerable extent, and if it does, to what causes is it to be referred, want of affection, deficient subsistence, or superstition?

19. Are children exposed, and from what causes, whether superstition, want of subsistence or other difficulties, or from deformity, general infirmity, or other causes of aversion?

20. What is the practice as to dressing and cradling children, and are there any circumstances connected with it calculated to modify their form; for example, to compress the forehead, as amongst the western Americans; to flatten the occiput, as amongst most Americans, by the flat straight board to which the child is attached; to occasion the lateral distortion of the head, by allowing it to remain too long in one position on the hand of the nurse, as amongst the inhabitants of the South Seas?

21. Are there any methods adopted, by which other parts of the body may be affected, such as the turning in of the toes, as amongst the North Americans; the modification of the whole foot, as amongst the Chinese?

22. How are the children educated, what are they taught, and are any methods adopted to modify their character, such as to implant courage, impatience of control, endurance of pain and privation, or, on the contrary, submission, and to what authorities, cowardice, artifice.

23. Is there any thing remarkable amongst the sports and amusements of children, or in their infantile songs or tales?

24. At what age does puberty take place?

25. What is the ordinary size of families, and are there any large ones?

26. Are births of more than one child common? What is the proportion of the sexes at birth and among adults?

27. Are the children easily reared?

28. Is there any remarkable deficiency or perfection in any of the senses? It is stated, that in some races sight is remarkably keen, both for near and distant objects.

29. To what age do the females continue to bear children? and for what period are they in the habit of suckling them?

30. What is the menstrual period, and what the time of utero-gestation?

31. Are there any ceremonies connected with any particular period of life?

32. Is chastity cultivated, or is it remarkably defective, and are there any classes amongst the people of either sex by whom it is remarkably cultivated, or the reverse, either generally or on particular occasions.

33. Are there any superstitions connected with this subject?
34. What are the ceremonies and practices connected with marriage?
35. Is polygamy permitted and practised, and to what extent?
36. Is divorce tolerated, or frequent?
37. How are widows treated?
38. What is the prevailing food of the people? Is it chiefly animal or vegetable, and whence is it derived in the two kingdoms? Do they trust to what the bounty of nature provides, or have they means of modifying or controlling production, either in the cultivation of vegetables, or the rearing of animals? Describe their modes of cooking, and state the kinds of condiment which may be employed. Do they reject any kinds of aliment from scruple, or an idea of uncleanness? Have they in use any kind of fermented or other form of exhilarating liquor, and, if so, how is it obtained? What number of meals do they make? and what is their capacity for temporary or sustained exertion?
39. Describe the kind of dress worn by the people, and the materials employed in its formation. What are the differences in the usages of the sexes in this respect? Are there special dresses used for great occasions? and, if so, describe these, and their modes of ornament. Does any practice of tattooing, piercing, or otherwise modifying the person for the sake of ornament, prevail amongst the people? N.B. Such modifications not to be blended with other modifications, used as signs of mourning, &c.
40. Have the people any prevailing characteristic or remarkable modes of amusement, such as dances and games exhibiting agility, strength or skill?
41. Are games of chance known to the people, and is there a strong passion for them?
42. Do the people appear to be long or short-lived? If any cases of extreme old age can be ascertained, please to state them. Such cases may sometimes be successfully ascertained by reference to known events, as the previous visits of Europeans to the country. Is there a marked difference between the sexes in respect of longevity?
43. What is the general treatment of the sick? Are they cared for, or neglected? Are any diseases dreaded as contagious, and how

are such treated? Is there any medical treatment adopted? Are there any superstitious or magical practices connected with the treatment of the sick? What are the most prevailing forms of disease, whence derived, and to what extent? Is there any endemic affection, such as goitre, pelagra, plica, or the like? With what circumstances, situations, and habits do they appear to be connected, and to what are they referred by the people themselves?

44. Where there are inferior animals associated with man, do they exhibit any corresponding liability to, or exemption from disease?

45. Do entozoa prevail, and of what kind?

46. What is the method adopted for the disposal of the dead? Is it generally adhered to, or subject to variation?

47. Are any implements, articles of clothing, or food, deposited with the dead?

48. Is there any subsequent visitation of the dead, whether they are disposed of separately, or in conjunction with other bodies?

49. What is the received idea respecting a future state? Does this bear the character of transmigration, invisible existence about their accustomed haunts, or removal to a distant abode?

Buildings and Monuments.

50. What are the kinds of habitations in use among the people? Are they permanent or fixed? Do they consist of a single apartment, or of several? Are the dwellings collected into villages or towns, or are they scattered, and nearly or quite single? If the former, describe any arrangement of them in streets or otherwise which may be employed.

51. Have any monuments been raised by the present inhabitants or their predecessors, and more especially such as relate to religion or war? State their character, materials, and construction. If they are still in use amongst the people, state this object, even if they should be of the simplest construction, and be little more than mounds or tumuli. If these monuments are no longer in use, collect, as far as possible, the ideas and traditions of the natives regarding them, and if possible, have them examined by excavation or otherwise, taking care to deface and disturb them as little as possible.

52. In these researches be on the look out for the remains of the skeletons of man or other animals, and, if discovered, let them be preserved for comparison with those still in existence.

Works of Art.

53. Let works of art, in metal, bone, or other materials, be likewise sought and preserved, and their similarity to, or difference from implements at present in use amongst the people of the district, or elsewhere, be noted.

54. When a people display their ingenuity by the extent or variety of their works of art, it will not only be desirable to describe what these are, but also the materials of which they are constructed, the modes in which these materials are obtained, the preparation which they undergo when any is required, and the instruments by which they are wrought. Such particulars will not only throw light on the character and origin of the people, but will, directly or indirectly, influence the commercial relations which may be profitably entered into when commerce alone is looked to. When colonization is contemplated, the facts contained in the replies to these queries will point out the mutual advantages which might be obtained by preserving, instead of annihilating, the aboriginal population.

Domestic Animals.

Are there any domestic animals in the possession of the people? Of what species are they? Whence do they appear to have been derived, and to what variety do they belong? Have they degenerated or become otherwise modified? To what uses are they applied?

Government and Laws.

55. What is the form of Government? Does it assume a monarchical or democratic character, or does it rest with the priests?

56. Are the chiefs, whether of limited or absolute power, elective or hereditary?

27. Is there any division of clans or castes?

58. What are the privileges enjoyed by or withheld from these?

59. What care is taken to keep them distinct, and with what effect on the physical and moral character of each?

60. What laws exist among the people? How are they preserved? Are they generally known, or confided to the memory of a chosen set of persons? What are their opinions and regulations in reference to property, and especially the occupation and possession of the soil? Does the practice of hiring labourers exist among them?

61. Have they any knowledge or tradition of a legislator, to whom the formation of laws is ascribed?

62. Do they rescind, add to, or modify their laws? and how?

63. Are they careful in the observance of them?

64. What are their modes of enforcing obedience, and of proving and punishing delinquency?

65. How are judges constituted? Do their trials take place at stated periods, and in public?

66. How do they keep prisoners in custody, and treat them?

67. What are the crimes taken cognizance of by the laws? Is there gradation or commutation of punishment?

Geography and Statistics.

68. Briefly state the geographical limits and character of the region inhabited by the people to whom the replies relate.

69. State approximatively the number of inhabitants. As this is an important, but very difficult question, it may not be amiss to point out the modes in which the numbers may be ascertained. The people themselves may state their number with more or less accuracy, but it should be known whether they refer to all ranks and ages, or merely comprehend adult males, who may be mustered for war, or other general purposes requiring their combination. In this case state the apparent proportion between adult males and other members of families. The number of habitations in a particular settlement may be counted, and some idea of the average numbers of a family be given. Where the people inhabit the water-side, the number and dimensions of their craft may be taken, and some idea of the proportion between the number of these and of the individuals belonging to them, may be formed. In drawing conclusions from observations of this kind, it will be necessary to have due regard to the different degrees of density or rarity in which, from various causes, population may be placed.

70. Has the number of inhabitants sensibly varied, and within what period?

71. If it have diminished, state the causes; such as sickness, starvation, war, and emigration. When these causes require explanation, please to give it. If the inhabitants are on the increase, is this the result of the easy and favourable circumstances of the people causing an excess of births over deaths; or is it to be assigned to any cause tending to bring accessions from other quarters? State whether such causes are of long standing, or recent.

72. Is the population generally living in a manner to which they have been long accustomed, or have new relations with other people, and consequently new customs and practices, been introduced?

73. If the people, being uncivilized, have come under the influence of the civilized state, to what people the latter belong, how they are regarded, and what is the kind of influence they are producing.* State the points of their good influence, if any, and those of an opposite character, as the introduction of diseases, vices, wars, want of independence, &c.

74. Is there any tendency to the union of races? how is it exhibited, and to what extent?

Social Relations.

75. What kind of relationship, by written treaty or otherwise, subsists between the nation and other nations, civilized or not? Have they any intercourse by sea with other countries? Do any of them understand any European language? Or are there interpreters, by whom they can communicate with them?

76. Are they peaceable, or addicted to war? Have they any forms of declaring war, or making peace? What is their mode of warfare, either by sea or land? their weapons and strategy? What do they do with the slain, and with prisoners? Have they any mode of commemorating victories by monuments, hieroglyphics, or preservation of individual trophies, and of what kind? Have they any national poems, sagas, or traditions respecting their origin and history? Where Euro-

* This question will comprise the existence of missions—the success or the want of it from causes connected with missionaries themselves or others.

peans have introduced fire-arms, ascertain the modes of warfare which have given place to them.

State whatever particulars respecting their origin and history are derived, either from traditions among themselves or from other sources.

Religion, Superstitions, &c.

77. Are the people addicted to religious observances, or generally regardless of them?

78. Do they adopt the idea of one great and presiding Spirit, or are they polytheists?

79. If polytheism exist, what are the names, attributes, and fables connected with their deities, and what are the modes in which devotions is paid to each? Are any parts of the body held sacred, or the reverse? Do they offer sacrifices, and are they of an expiatory character, or mere gifts?

80. Have they any sacred days or periods? fixed or moveable feasts, or religious ceremonies of any kind, or any form of thanksgiving or other observance connected with seasons?

81. Have they any order of priests, and if so, are they hereditary, elective, or determined by any particular circumstance?

82. Is the religion of the people similar to that of any other people, neighbouring or remote? If different, are they widely so, or dependent on particular modifications, and of what kind?

83. In what light do they regard the religion and deities of neighbouring tribes?

84. Is there any idea of an inferior order of spirits and imaginary beings,—such as ghosts, fairies, brownies, and goblins; and how are they described?

85. Have they any notions of magic, witchcraft, or second sight?

86. What ideas are entertained respecting the heavenly bodies? Have they any distinction of stars, or constellations? and if so, what names do they give them, and what do these names signify?

87. Are they in any manner observed with reference to the division of the year, and how?

88. If time is not divided by observations of those bodies, what other mode is adopted? and do observances connected with them rest with the priests or chiefs?

89. When the traveller, by personal acquaintance with the language, or by means of competent assistance from interpreters, can freely converse with the people, it will be desirable that he should form some idea of their amount of intelligence, their tone of mind with regard to social relations, as respects freedom, independence, or subserviency, and their recognition of moral obligations, and any other psychological character which observation may detect; and more especially such as may contribute to an estimation of the probable results of efforts to develope and improve the character.

RICHD. KING, M. D.

$\frac{a}{27}$ *Sackville St.*

Proceedings of the Asiatic Society for the month of NOVEMBER, 1844.

The stated monthly meeting was held on Wednesday evening, the 6th November.

Charles Huffnagle, Esq. the senior member of the Committee of Papers, present, in the chair.

It was stated to the meeting by the Secretary that, as arranged at the last meeting, a deputation from the Society had waited on the Honourable the Governor General to announce to him his election as President.

The deputation consisted of the Honourable Sir John Grant and Sir Henry Seton, Vice-Presidents, the members of the Committee of Papers, the Secretary, and a number of members of the Society. Sir John Grant, Vice-President, informed the R. H. the Governor General of his election, observing, that the honorable post of our President had been filled by certain of his predecessors in the Viceroyalty of India, and that the Society feel assured that it would be grateful to a public man so deeply interested as was our present Governor General in the prosperity of this country, to find himself in a position to foster and superintend the proceedings of a Society, the object of which had long been the elucidation of its resources, and the better knowledge of its history, natural productions, literature, and antiquities.

The R. H. the Governor General replied: That he received the intimation of his election with feelings of gratification; that the Society was not mistaken in concluding that he was warmly interested in its proceedings, and that he accepted, with the expression of his thanks, the office of its President. He added, that the great press of business which his public duties necessarily induced, must he feared deprive him of the power of attending to his presidential functions with that degree of attention which he would otherwise have desired to give to them; but that in so far as was possible to him, he would personally superintend the labours of the Society,

and at all times and occasions do his utmost to further their progress, and to enhance the welfare and prosperity of so long established and so highly respected an institution.

The following gentlemen proposed at the last meeting, were ballotted for and declared duly elected :—

T. R. Davidson, Esq. C. S.	Capt. Marshall, B. N. I.
Allan Gilmore, Esq.	J. Borrodaile, Esq.
J. P. Mackilligin, Esq.	

And the following new members were proposed :—

J. Alexander, Esq. C. S. proposed by C. B. Trevor, Esq. C. S. and seconded by the Secretary.

J. Furlong, Esq. proposed by the Secretary, seconded by Robert W. Frith, Esq.

The following list of books presented and purchased was read :—

Books received for the meeting of the Asiatic Society on the 6th November, 1844.

Books presented and exchanged.

1. Meteorological Register for the month of September. From the Surveyor General's Office.

2. Oriental Christian Spectator, Vol. V. No. 10. October, 1844. Bomhay.—By the Editor.

3. Calcutta Christian Observer, Vol. XIII. Nos. 149-50. October and November, 1844. By the Editor.

4. Calcutta Journal of Natural History, etc., By J. M'Clelland and W. Griffith, No. 18. By the Editors.

5. London, Edinburgh and Dublin Philosophical Magazine, Nos. 159-161, for April to June, 1844. By the Editors.

6. Edinburgh New Philosophical Journal, by Jameson, No. 72. April, 1844. By the Editor.

7. Proceedings of the Royal Irish Academy for the year, 1842-43. Part 7. Dublin, 1844. By the R. I. A.

8. Report of the 13th Meeting of the British Association for the Advancement of Science, 1843. By the Association.

9. The Athenæum, Nos. 875-879, per August 1844.

Books Purchased.

10. Journal Asiatique, Nos. 10-12.

11. Histoire Naturelle des Poissons, par M. de Cuvier et M. A. Valenciennes ; tome xvii. 55. Paris. 1844.

12. D. D. Planches, Nos. 471-496.
13. Journal des Savans, January to May 1844.
14. History of Rome, by B. C. Niebuhr, edited by L. Smitz, London 1844. Vols. 3 and 4.

Read the following letter from Government :—

No. 684 of 1844.

From the Secretary to the Government of India, to H. TORRENS, Esq., Vice-President and Secretary to the Asiatic Society, dated Fort William, the 10th October 1844.

Foreign Department—*Secret.*

SIR,—I am directed by the Governor General in Council to transmit, for such notice as the Society may deem them to merit, the accompanying “Notes on the Commerce, Revenue and Military resources of the Punjaub, taken in 1837,” and furnished to Government by Major R. Leech, C.B.

2. You will be pleased to return the original Report when the Society has no further occasion for it.

I have the honor to be, Sir,

Your most obedient servant,

Fort William, the 10th October, 1844.

J. CURRIE,

Secy. to the Govt. of India.

The MSS. being a foolscap sized volume of some thickness, containing much interesting statistical matter, it was, after some conversation, proposed by the President, and seconded by Dr. Mouat, that the book be circulated to the Members of the Committee of Papers for suggestions as to selecting portions for publication.

Read the following letter from Government :—

No. 2640 of 1844.

From J. CURRIE, Esq. Secretary to the Government of India, to the Secretary Asiatic Society, dated Fort William, 19th October, 1844.

Foreign Department.

SIR,—I have the honor to transmit, for such notice as the Society may think them to deserve, the accompanying copy of a report by Captain Brodie of his Tour in the Western Naga Hills, and also copy of one by Mr. Masters on the Botany of those hills.

I have the honor to be, Sir,

Your most obedient servant,

J. CURRIE,

Fort William, the 19th October, 1844.

Secretary to Govt. of India.

Resolved—That the papers be circulated to the Committee of Papers.

Read a letter from Lieut. J. Latter, B. N. I. addressed to the Secretary, on the subject of the Bhuddist Coin sent round by Captain MacLeod, from Moulmein, which was referred to the Editors for publication in the Journal.

Read extracts of letters from Major T. B. Jervis, Regent's Park, accompanying some new and very beautiful specimens of Lithography and Glyptography, as follows :—

I enclose in this packet a specimen of my Lithographic press, "*Argemone Mexicana*," copied out of Wight's *Flora*, a most splendid specimen of art, and am in treaty to do all the plates for the London Royal Asiatic Society. I have spoken to Wilson, with whom I am on intimate terms, to arrange with your Society for the plates of the Asiatic Journal and Society, and any embellishments you may require, which I will execute at my Amateur press rather cheaper and quicker than you can get them done in Calcutta or England. If you approve of them, I shall be obliged by your giving these specimens as much publicity as possible, and shall be glad if I can do any thing to forward the cause of science in India. If you would communicate with my brother, Col. Geo. Jervis, chief Engineer in Bombay, I have no doubt you would get contributions from that quarter, and he would tell you exactly the cost of all that I have sent out to him, and to yourself. More beautiful lithography than that of the flower, you have never seen, and the probability is that an immense accession of information would flow in from all quarters, if only parties could get their illustrations accurately and cheaply lithographed.

I should be happy if you would refer to my brother for some most curious and valuable specimens forwarded to him of the application of Lithography to cheques, passes, receipts, &c. applicable to the Salt, Opium, and other such departments.—Papers and documents so prepared, would never be imitated, or admit of erasures without detection.

I ask your kind excuse for this brief and plain address, and should be most happy, if I could in any way express the obligation under which you have laid us.

Yours very truly,

(Signed) F. B. JERVIS.

Observations of the Comparative use and merit of the various kinds of Artistical Illustration, by Major T. B. JERVIS, F.R.S.

THE art of *Printing* has materially contributed, in the designs of Providence, to the civilization of the world, and to the promotion of the gospel; in fulfilment of which objects we hail every improvement in this so simple and ready means of communicating our thoughts and experience to others :—yet how much, that is instructive and valuable, escapes the power of the pen! how many lovely tints, how many undefin-

able forms, and arrangements, defy description! the disposition of the fleecy cloud, the rich array of floral hues and symmetry, do but mock our imperfect conceptions of nature. Failing to give endurance to them by any descriptive process,—the art of *Printing* is confessedly incomplete; yet, the artist's skill is limited, and can only be imparted through the medium of other contrivances. *Engraving*, as a means of communicating and multiplying such artistical skill, is justly appreciated as a necessary adjunct to *Printing*, and has now been brought to a high state of perfection in England.

The impulse which has been given to every discovery, in the progress of events, for the last fifty years, and the long interval of peace, have operated mightily on all those branches which are in any way connected with chemistry, and our artists have not been slow to perceive that the strictest adherence to the symmetry of nature, to fact, to beauty, and to taste, are as intimately connected with the arts of design as a regard to the niceties of manipulation to practical success.

The earliest and rudest process of *Wood-cutting* was admitted to possess a high degree of usefulness—how short it falls of the art as now practised! and yet, perhaps, those very rude specimens were often as costly, in bygone days, as some of the woodcuts introduced, by way of embellishment, into many elaborate publications of the present time: the woodcuts, for instance, in Loudon's works on gardening and agriculture. How exquisitely beautiful, also, are many of the little woodcuts in children's books, those of the Tract Society, for example, on special objects of Natural history. Do not such lend a fascination to the inculcation of right principles, and smooth the old rough paths of education; the eye of the teacher, or the parent, rests sweetly on them; yet far more delightfully the eye of the little ones—and the object is nobly and simply gained. At a single glance, without an effort, what would be otherwise inadequately attempted, and imperfectly employed, is pictorially communicated with every advantage.

The art of *Copper-plate engraving* was chiefly promoted as a substitute for woodcuts, by the eminent artists of the Italian school, who condescended to throw all the weight of their lofty mind and talent into the scale, and thus conferred on this art a character, which to this day, it has not yet acquired in Britain. Where, indeed, do we see persons thus occupied, though remarkable for their proficiency in design, admitted to a place in society, as persons entitled by taste, and their proper art, to the same consideration as the painter and the poet? We have been too much accustomed, hitherto, to treat this as a purely mechanical business.

Engraving on steel, as a further step to the multiplication of illustrations, has its advantages and disadvantages. A copper-plate engraving is subject to wear out, after a comparatively limited number of impressions. After some two or three thousand, the best engraving on copper is sensibly deteriorated: then, on the other hand, it can be retouched, alterations may be introduced, and these with greater ease and less expense than is supposed. But the steel engraving cannot be altered; nevertheless, it is sharper, cleaner, and more durable; and will admit, with proper care, of an indefinite number of impressions. For maps, copper-plate engraving is unquestionably to be preferred to steel engraving. For line engraving, perhaps on the whole, steel is to be preferred.

Then there are *Mezzotint*, *Aquatint*, and various other similar processes fitted principally for historical subjects, or portraits, of which it is sufficient to say, they

have all their respective merits when restricted to their respective proper objects; and then only, when committed to competent artists. A bad engraving reflects, now-a-days not so much discredit on the artist, as the party who employs him; because the highest degree of excellence, and finish, and taste, can now be attained with sufficient,—nay, we speak truly,—a very moderate remuneration for time. If such folks will have cheap work, they may overreach themselves, and for a while impose upon the public, while they, in fact, keep back the true interests of their country, and of knowledge; but let them be well advised, that we are all on the advance, and other modes will supersede these expedients, and place the meritorious talent of the engraver beyond their sordid reach.

It would seem, in adverting to the period when *Printing* and other kindred inventions were brought to light, that the Allwise Disposer had then his great design of the more extensive communication of the Gospel principally in view. At least we love to consider every event as so happily falling out, and concurring to His praise in the exercise of His sovereign love. It was at the commencement of a late and glorious revolution in the arts and sciences, when the mighty power of steam was summoned to co-operate with human industry and intelligence, that *Lithography* came also in aid of those oriental languages which do not admit of their being so readily, or correctly, expressed in moveable metal type. Look, for instance, at the Chinese, the Persian, Arabic, Mandchù, and various characters of India and the Eastern Archipelago: these, without one exception, could never be so elegantly or exactly printed by moveable metal types; and have, in every such attempt, a certain formality and rudeness, comparable only by the relative elegance of a very fine woodcut from the hands of a modern artist, and one of the coarse woodcuts of the earliest school: but besides these, there are a great variety of subjects where softness, beauty, and, more than all, where economy is specially desirable, to which *Lithography* is particularly adapted. It yet remains to be seen how much more extensively this elegant and purely chemical process, as it may be called, can yet be brought; and in the performance of this, we do not hesitate to affirm also, that there is no reasonable limit to the true representation of the most exquisite and complicated works of nature and art. For maps of a superior kind, there can be no question that lithography is peculiarly fitted. Good impressions may be taken, with proper care, to the extent of some two thousand; and an unlimited number of impressions at second-hand, by transfers from the original, or from copper-plate engravings.

For a very great variety of illustrations, botanical drawings, and landscapes, *Lithography* possesses greater facilities and recommendations, in all cases where the number required is not great, than copper-plate engraving, woodcuts, or another remarkable art, of which we are about to speak—*Glyphography*; that is, *cæteris paribus*, the cost, number of impressions, and excellence of execution, all taken into account, *Lithography* is best suited, when the number of impressions does not exceed five hundred, or one thousand; and the chalk lithographic drawings are evidently in all cases more true to nature than aquatint, or stippled engraving on copper or steel.

But the crowning process is *GLYPHOGRAPHY*, an art for which we are indebted to the ingenuity of Mr. Edward Palmer, whose attention had been early directed to other methods of multiplying engravings by the Electrotpe process. Here is a simple, efficacious, and universal method of perpetuating recollections, facts, and ideas; possessing at the same time some peculiar recommendations to public notice; in its

comparative cheapness, the readiness with which it can be carried on, the high degree of perfection to which it may be brought, in the hands of competent persons; its general applicability; lastly, and principally, that it is an art which requires very little study or instruction.

With these prefatory remarks we invite attention to the specimens now submitted, and to the volume published by Mr. Palmer, price 4rs., trusting that these will find many admirers in India and China; and this valuable art meet with every encouragement from the Government, and the community, European and Native. Further information may be had on application to Major T. B. Jervis, who is appointed sole agent for Mr. Edward Palmer, for India and China. A small volume, descriptive of Glyphography, is now before the public—and with these particulars they have likewise an opportunity of estimating with tolerable exactness the cost of any other work by the expense of such specimens: as of those also in Lithography and Engraving, by similar illustrations of various kinds.

Referred to the Committee of Papers for communication with Major Jervis.

Read the following extract from a letter addressed to the Sub-Secretary by Lieut. Baird Smith, B. E. Delhi Canal Department.

I have had an interesting discovery lately in a second submerged town or village, about two miles below Behut, in the bed of the Muskurra river, one of the mountain torrents that drain the tract of country at the base of the lower Himalayan range. I have got a number of coins, household utensils, mill stones, silver bangles, and many other things from the spot. These articles were found about 6 feet beneath the surface of the ground, and were exposed in consequence of the Muskurra changing its course, and cutting away its bed and banks to a considerable depth. I am told that a large quantity of jewellery and much silver coin were discovered by people who now conceal them. I intend to extend the excavations, and to take measures for securing what may then be discovered. The coins I have obtained are of silver and copper, in excellent preservation and of Mahomedan types. Those found at Behut, were generally of pure Hindoo character, and this latter place has evidently been buried at a much earlier date than the one now discovered. I have no doubt that farther examination of the locality will lead to results of interest. If so, I may put them in form, and send them to you.

21st August, 1844.

BAIRD SMITH.

The Secretary was authorised to address Lieut. Smith, to know what the extent of work in the buried village might be, and as to the probable cost of the whole, with a view to the Society's taking a share in what might be found.

Read extract of a letter from E. H. Lushington, Esq. C. S. addressed to the Secretary.

I send you a stone on which are cut some Arabic letters, but which neither I or any one in the neighbourhood can decypher.

Should you discover that the stone contains matter of no greater import than the one discovered by Mr. Pickwick, you must forgive me on the score of ignorance.

Should however, the contrary be the case, I shall have much pleasure in sending the Society by the first opportunity some more slabs, &c. which were shewn me buried in the earth near a village, about 12 miles hence. The village is full of old temples, &c. and I shot a snake near one of them, upwards of 17 feet long, but I regret that its skin was so much injured as not to be worth the keeping.

Jessore, Monday 30th.

EDWARD H. LUSHINGTON.

The inscription consists of excerpts from the third chapter of the Koran, called the IMRAN, selected, as the Secretary observed, with special reference to the character of the majority of the early frequenters of the mosque in which it must have been placed, who as new converts to Islamism, are exhorted by texts declaratory of the corrupting influence of idol worship, declarations of the Majesty and power of the one God, and denunciations against unbelievers, to avoid relapsing into religious error. A copy was ordered to be sent to Mr. Lushington, with the best thanks of the Society.

Read the following letter from Dr. McGowan, of the Ningpho Hospital, with a translation of the impression taken from one of the compartments of the great hell presented to the Bishop of Calcutta by Captain Warden, see *Journal Asiatic Society, Proceedings for May 1844.*

The Secretary remarked upon the curious evidence given in the lists of titles, offices, and distinctions thus perpetuated in metal, of the high value attached by the Chinese to honorary distinctions for literary and official merits.

H. TORRENS, Esq., *V. P. Asiatic Society of Bengal, &c.*

DEAR SIR,—I send the accompanying Translation for the Bengal Asiatic Society, regretting that it is not of greater value.

Should the Society send me the remainder of the inscription on the Bell, so that it will reach me without a heavy postage, I shall feel happy in furnishing them a complete translation.

Willing to promote the great objects of this parent institution as far as I can in this remote theatre of its operations,

I remain,

Your's truly,

D. J. MACGOWAN.

Hongkong, 29th August, 1844.

Translation of a Portion of the Inscription on the Ningpo Bell at Calcutta, by D. J.

MACGOWAN, M. D. of the *Missionary Hospital at Ningpo.*

Dr. Macgowan presents his compliments to the Asiatic Society of Bengal, and begs their acceptance of the subjoined translation of the inscription (kindly furnished him by its Secretaries,) copied from the Chinese bell from Ningpo, now in Calcutta.

Dr. Macgowan regrets that the portion copied should have been merely a list of the principal Mandarins of the district, with a list of the subscribers who contributed money for the casting of this, the principal ornament of one of their splendid temples.

The remaining portion of the inscription is doubtless of a religious character, though it may contain passages of historical interest, as bells are the only ancient monuments the Chinese possess.

Should the Asiatic Society desire a complete translation of the inscription, Dr. M. will be happy to accede to their request:

Translation.

“Wangson, Judge of Chekeang, inspector of Ningpo, Shadu Shing—Tacchoo, superintendent of customs and overseer at Tungling raised one step, and recorded seven times.

“Sickchaun, Acting Judge of Chickeang, inspector of Ningpo, Shadu Shing and Toechow, acting receiver of customs, and prefect of Ningpo, twice.

“Leongkemfuh, Marine Magistrate of Ningpo, Portmaster, Assistant Prefect re-siding at Taetsung, raised one step.

“Chowcheying, Salt Inspector of Ningpo district, and assistant in the Hydraulic department.

“Footan, by Imperial appointment, assistant prefect and Magistrate at the Kin country in Ningpo district, raised three steps and recorded three times.

“Chinymuhang, a graduate of the first degree and Professor.

“Chukwongue, instructor of the Ningpo College, raised one step and twice recorded.”

The three sons of Wootingseang, of the Hongchoo foundry, made the bell (date not on this part of the inscription.)

Subscribers' Names.

“Wangueiching, Letingsieang, Kaduteen Seeng, Legeseih, Weishetow, Chinche-thon, Lemkiashoon, Kwongheongtring, Lepengson, Sinchoonping. Chinkaemhuy, Chinchesen, Choe Choonuchug, Linkinunch, Lekoetoes, Lenkengans Chinyungseih Chinkeho, Leahynensih, Langheanyut, Chingpangpoo, Gomyongchow, Weiuchuykmo, Tenshoow, Wongwhongmong, Linpintro, Wootoque, Chinchousee, Chinkeangshan, Tsangpongse, Chonghunping, Tangpildung, Henlungshun, Wang-monghd, Modurhepa, Taytajin Tungmanghe, Chingmankmang.

“All the Buddhas through all ages.”

Resolved—That the whole of the inscription be taken off, and sent for translation and subsequent publication in the Journal.

Read a letter from Captain Newbold, M. N. I. Asst. Commr. Kurnool, Madras Territory, accompanying a note on the Ajaib ub Muklukhat.

This curious and interesting paper was referred to the Editors of the Journal for early publication, that it may have also the advantage of Dr. Sprenger's comments.

Read the following letter from J. Marshman, Esq. Serampore, to the Sub-Secretary.

H. PIDDINGTON, Esq.

MY DEAR SIR,—I annex to this note an extract of a letter I have just received from Mr. Burgess, an American Missionary at Ahmedabad. He has begun in good earnest the pursuit of Oriental literature. Could you assist him to a copy of the number he requires, the value of which I shall be most happy to remit to the bookseller. He also asks me whether the Journal is taken in by the Oriental Society, lately established in Boston, and indeed whether a single copy is sent to America. He also adds, that it is strange not a copy can be procured at Bombay.

JOHN MARSHMAN.

“Shall I be pardoned in asking you to procure for me, or perhaps send this note to the proper agent who will despatch to me a Number of the Asiatic Journal published in Calcutta, containing a list of Sanscrit words, which correspond with Greek and Latin words, &c. (I do not know the title of the article or the No. of the Journal in which it is found,) which I think has been printed during a year past. I have understood that a more extensive comparative list of Sanscrit words with other Languages, has lately been published, and if possible I wish to procure it.”

The No. of the Journal was ordered to be supplied for Mr. Burgess, and that arrangements should be made to supply the Journal to persons desirous of purchasing it on that side of India.

Read the following letters from J. S. Owen, Esq. accompanying the different specimens to which they refer.

H. TORRENS, Esq., *Secretary Asiatic Society.*

SIR,—I have the pleasure to forward for the Society's inspection and acceptance, a few nuts of a new species of *Areca catechu* (palm,) just arrived from the Naga hills.

Calcutta 29th October, 1844.

JOHN OWEN.

H. TORRENS, Esq., *Secretary Asiatic Society.*

MY DEAR SIR,—I beg to hand you for the Society's inspection and acceptance, some juice from the “*Ficus elastica*,” of the Naga hills, which has just arrived from that quarter. I am inclined to think it will be found of a very superior quality.

Also some juice from the *Mackoi*, (Assamese) or *Messua Ferræa*, Linn. The difference in color is solely attributable to age, the transparent piece being of young exudation, and the more dark one, is I should say of about three years growth.

JOHN OWEN.

TO H. TORRENS, ESQ., *Secretary Asiatic Society*.

SIR,—I have the pleasure to send you some musters of the most valuable barks with portions of wood attached to each.

They are from the Naga hills, and I much regret that more have not arrived.

26th October, 1844. 12, *Chowringhee*.

JOHN OWEN.

With the thanks of the Society to Mr. Owen, a request was ordered to be made to him for some account of the properties of the various articles.

Read the following note from Captain Bogle, Commissioner Arracan, accompanying the specimens to which it refers.

I have the pleasure to send you per "Amherst," for the Asiatic Society, a piece of Teak wood cut in the Forests of Arracan!! also a packet of Hill people's clothes. I regret I have not time to write fully about them to-day, but I will do so by dak in a day or two, mean time this will suffice to let you know that these things are in the "Amherst" for you.

A. BOGLE.

Akyab, 22d August, 1844.

Two plaster casts of Fossil Tympani of Whales, taken by the Rev. Professor Henslow from the Suffolk Crag formation at Felixstow, were presented by Captain Kittoe, B. N. I.

The Curator, Geological and Mineralogical department, being only convalescent from a severe illness, had been unable to prepare any report for this month.


For all the above presentations and contributions, the best thanks of the Society were accorded.

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